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ABSTRACT

This handbook contains computer-related, classroom-tested ideas that were contributed by business education teachers and administrators to fuse computer information into computer and noncomputer courses. An alphabetical listing of contributors identifies the category/categories in which their enrichment idea can be found. The contributions are grouped into 17 subject matter categories: basic skills, business English/communications, accounting/bookkeeping/recordkeeping, consumer economics/personal finance/business math, keyboarding/typewriting, office procedures/office management/records management, general business/basic business/introduction to business, shorthand/machine transcription, business law, marketing/business management, computer literacy/computer awareness/introduction to computers, microcomputer applications/information processing (word processing, spreadsheets, database, graphics, integrated software, desktop publishing), networking, telecommunications/electronic mail, computer languages, general computer usage, and teaching techniques/classroom management. Each contribution is presented in this format: title; contributor's name and address; objectives; procedures; materials needed; comments; and answer key and/or word list. Student handouts suitable for replication are provided. The handbook describes 98 projects; the supplement describes 68 project. (YLB)

ED359386

COMPUTER ENRICHMENT HANDBOOK

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COMPUTER ENRICHMENT HANDBOOK

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PREFACE

By leafing through the pages of the Handbook, you will see that it is the product of many business educators. The Computer Enrichment Handbook is the outgrowth of the National Business Education Association's charge to the Computer Education Task Force to develop guides/materials/strategies for fusing computer information into computer and non-computer courses. The Task Force's subcommittee on Computer Enrichment Activities was assigned this task, and the Computer Enrichment Handbook is the fulfillment of the charge.

To have the Handbook reflect a broad base of creative ideas, the subcommittee sent letters to the state supervisors and directors of business education across the nation. The state supervisors and directors were requested to identify qualified teachers and administrators (secondary and post-secondary) from their states whom they recognized as innovative in the teaching of computer-related concepts and applications. The subcommittee received 351 names from two mailings to the state supervisors and directors. These individuals were sent letters requesting them to submit their computer-related, classroom-tested ideas. After two mailings to the 351 teachers and administrators and a presentation at the National Business Education Convention, 135 contributions were received.

As each contribution was received, it was keyed and prepared for submission to a subject-matter editor. The subject-matter editor, in addition to the senior editor, reviewed each submission for its accuracy, completeness, appropriateness, and computer-relatedness. If the submission were rejected by the first subject-matter editor, it was sent to a second subject-matter editor for additional review. The senior editor made the final choice if opinions of the subject-matter editors conflicted. This process resulted in a five percent rejection rate.

Once the submission was accepted, the keyed and edited version was returned to the contributor along with a copyright release form. The contributor reviewed the document's accuracy and signed the copyright release form verifying that the submission was his/her original idea. If the contributor had used copyrighted materials from another source in preparing the submission, he/she was asked to identify that source so that the subcommittee could attempt to secure a copyright release. If the second copyright release could be secured, the submission was included in the Handbook.

The Center for Vocational and Adult Education of Auburn University, Auburn, Alabama, under the directorship of Dr. Richard A. Baker, financially supported the development of the Handbook. The senior editor expresses appreciation to graduate assistant Mrs. Nancy Gardner and to undergraduate assistant Miss Denise Cosby for their many hours of dedicated service to the completion of this project.

The Computer Enrichment Handbook reflects the methods and materials used by the teachers and administrators who shared their ideas. The National Business Education Association in no way endorses or approves the use of specific hardware, software, methods, or materials described in the Handbook. Although the subcommittee and the contributors have attempted to be accurate in the keying and preparation of the contributions, the National Business Education Association does not assume any responsibility for the accuracy of the ideas presented in the Handbook.

This Handbook is offered as a service to business educators for use with their classes. Contributions which contain student handouts have been prepared for easy photocopying by the teacher.

The Computer Education Task Force encourages you to submit your computer-related, classroom-tested ideas for future consideration. Guidelines for submitting your enrichment ideas are included in this Handbook.

Bonnie Roe White
Senior Editor and Chairperson
Computer Enrichment Activities Subcommittee
of the NBEA Computer Education Task Force

GUIDELINES FOR SENDING COMPUTER-RELATED ENRICHMENT IDEAS

Your time is LIMITED and VALUABLE. We have attempted, therefore, to make it easy for you to send us your ideas.

1. You may send previously prepared materials such as a student handout. We are seeking teacher-prepared, classroom-tested, computer-related ideas. If you submit photocopies, please try to send legible photocopies. We will prepare the material in final format; however, if you have diagrams, schematics, flow-charts, etc., please send a dark enough copy for us to photocopy it without having to redraw the material.
2. If your enrichment idea must be run with specific software, please include the name of the software (and address of the software company if possible). If your contribution is generic to most software packages, you do not need to identify a specific software package.
3. IDEAS DO NOT HAVE TO BE LENGTHY TO BE SUBMITTED. Wherever possible, however, lengthy descriptions should be substituted or reduced by using diagrams, charts, etc.
4. Please provide this information at the beginning of each contribution:

   Category (See Table of Contents for category listing.)
   Title
   Your School
   School Address
   City and State

5. Please add any of the following categories you need to enhance and clarify your ideas:

   Objectives
   Procedures
   Materials Needed (include software information here)
   Comments
   Terminology
   Key/Answers

6. Please include your summer/home address and telephone numbers for work/school and home.
7. Please send to the following address:

   Dr. Bonnie J. White
   Center for Vocational and Adult Education
   Donahue and Thach
   Auburn University, AL 36849-5526

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Berg, Carol	05
Bertolino, Mike	12c
Blair, Gail	12a
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Brett, Janell Scharer	11
Bugni, Glenn	17
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Drake, Carol	17
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Basic Skills

Category 1

WANT AD PROJECT

CONTRIBUTOR:
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Objectives:

- The student will integrate keyboarding skills, decision-making skills, and implementation of a word processing program to acquire skills in reading and understanding want ads.

Procedures:

- Select a word processing program and input the questions and information on the unit.
- Save program on your diskette and make a set for classroom use.
- Prepare the answer key and save on your master diskette. You many want to print out a transparency so students can check their answers upon completion of the project.
- Have students call up program and complete the want ad project.

Materials needed:

- Handout: TERMINOLOGY, WANT AD PROJECT, and JOB ADS
- Computer and word processing program
- Diskettes for classroom use
- Overhead projector and transparencies (optional)

Comments:

- This simulation may be used in a keyboarding class, general business class, or as a reading project within a classroom setting.

Key:

1. B
2. C
3. E
4. D
5. A
6. D
7. C
8. D
9. D
10. C

TERMINOLOGY

Job ads in a newspaper often use special words and abbreviations. Before you can understand the ads, you must know what these words and abbreviations mean.

DEFINITIONS

Benefits--things an employer gives you besides a salary. Benefits might include paid vacation, sick leave, insurance, and use of a car.

Commission--a salary which is based on how much you sell.

References--recommendations from past employers or others who know you. Sometimes you bring letters from these people when you apply for a job. Usually you just bring their names, addresses and phone numbers to the employer, who will get in touch with them. Ask for permission before you use someone's name as a reference. Do not use members of your family as references.

Resume--short, written account of your education and past employment; also include your name, address, and telephone number.

ABBREVIATIONS

avail.--available

bnfts.--benefits

comm.--commission

co.--company

dept.--department

eve.--evening

excel.--excellent

exper. or exp.--experience

grad.--graduate

hrs.--hours

h.s.--high school

immed.--immediately, immediate
(typing/shorthand)

ins.--insurance

mo.--month

nec.--necessary

pos.--position

pref.--preferred

refs.--references

req.--required

rm.--room

sal.--salary

trans--transportation

w. or w/--with

wk.--week

wpm.--words per minute

yr.--year

WANT AD PROJECT

1. Match the following. Write the correct letters on your answer sheet.

   (1) exp. nec.
   (2) resume
   (3) refs. req.
   (4) h.s. grads. only
   (5) commission

   (a) The job has good benefits.
   (b) You must have had some experience in the job.
   (c) It tells about your schooling and your past jobs.
   (d) You must have graduated from high school.
   (e) You must be recommended by people who know you.

2. Study the job ads page carefully to answer the following questions. Write the correct letter on your answer sheet.

   (6) Which one of these would you not put on a resume?

   (a) the kind of work you have done
   (b) where you live
   (c) the last grade you finished
   (d) the license number of your car

   (7) Which one of these jobs would give you a commission?

   (a) teacher
   (b) factory worker
   (c) boat salesperson
   (d) police officer

   (8) Who would be the best person to list as a reference for a job as a furniture mover?

   (a) your art teacher
   (b) your doctor
   (c) your brother
   (d) your past employer at the Ace Moving Co.

   (9) Look at the ad beginning "Part-Time." Which one of these statements is true about that job?

   (a) You must have graduated from college.
   (b) You must have your own car.
   (c) You should have done something like this before.
   (d) You should call about the job.

   (10) Look at the ad for a babysitter. Which one of these statements is true about that job?

   (a) You have to work evenings.
   (b) You must apply in person.
   (c) You must work in the employer's home.
   (d) You must be a high school graduate.

JOB ADS

HOUSEKEEPING	5 days per wek. Liv in. Rm., board, small sal. Write Box 87, Daily Sun Times, Dallas.
SALES HELP	To represent local company. Must be 21 years or over. Some travel. Refs. req. Must have current driver's lic. Car furnished. Sal. + comm. Call Ms. Alanski, 424-2431.
CASHIER	30 hrs. per wek. Avail. immed. Hot Dog Heaven. 87 N. Front St., Laredo. Apply in person only.
SECRETARY/ RECEPTIONIST	Exp. only. Accurate typing. 60 WPM. Some shorthand. Good skills on phone. Send resume and sal. req. to Box 77, San Antonio.
PART-TIME	Short order cook. No exp. nec. H.S. grads only. Good sal. Call Mr. Jones 629-7711.
BABYSITTER	Mature, in my home for 7 yr. old. Own trans. Exp. pref. No eves. Ft. Worth area. Call 555-8899 after 6 p.m.
APARTMENT RECEPTIONIST	Applicant must be a good typist with an ability to deal with the public. Prior office exp. nec. as this job can be very high pressure at times. Call 888-3344 for appointment.

VOCABULARY DEVELOPMENT

CONTRIBUTOR:
Lynda P. Hawkins
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Objectives:

- The student will improve basic vocabulary skills through systematic presentations of word groups.

Procedures:

- Select groups of words to introduce. After students have studied the words, use the crossword puzzle to reinforce their knowledge.

Materials needed:

- Handout: VOCABULARY CROSSWORD PUZZLE
- The crossword puzzle forms can be made by hand or by using a word processing software program. Crossword Magic is a simple and fast computer program that generates the crossword puzzle and the puzzle key.

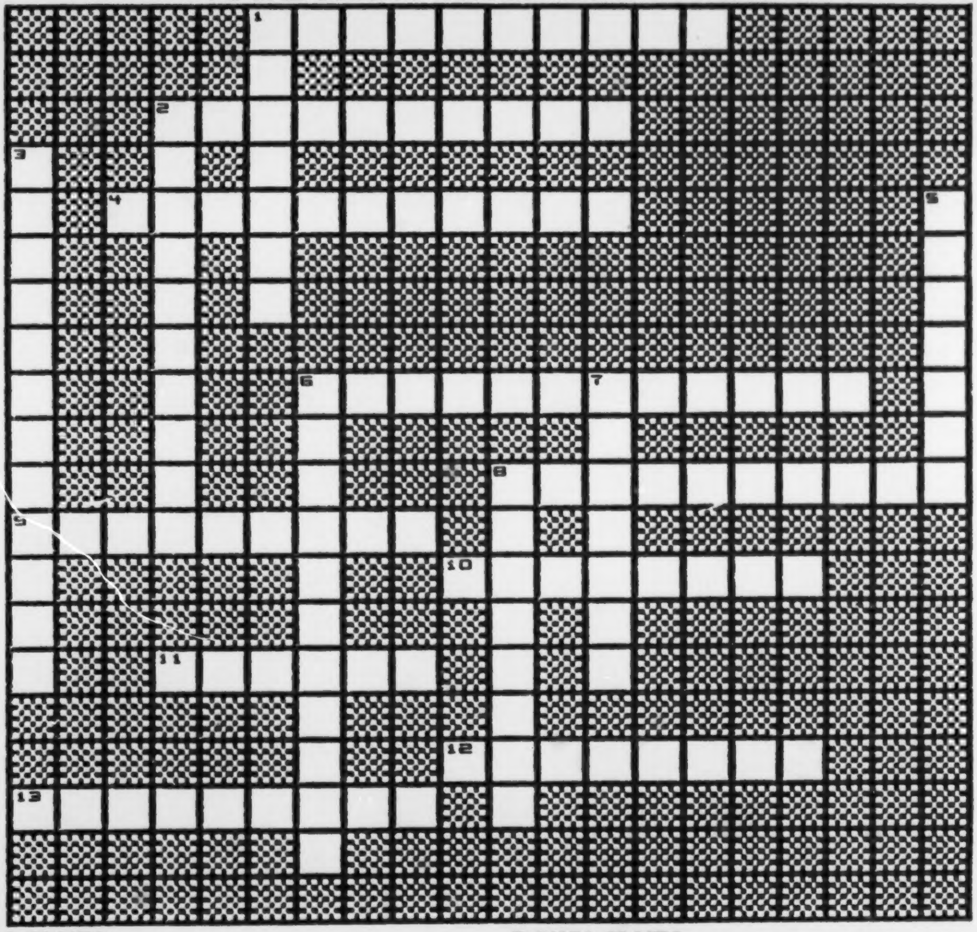
Answers:

```
     ABBREVIATE
     B
   ABSOLUTELY
A  C E
C ACKNOWLEDGE      A
C  E C             C
I  S E             H
D  S               I
E  I  ACCOMPANYING E
N  B  C     C      V
T  L  C   ACCUMULATE
ACCESSORY C R
L     M  ACCUSTOM
L     M   U E
Y  ACROSS R D
      D   A
      A  ACQUAINT
ACQUITTED Y
      E
```

Word list:

ABBREVIATE
ABSOLUTELY
ABSENCE
ACKNOWLEDGE
ACCOMPANYING
ACCUMULATE
ACCESSORY
ACCUSTOM
ACROSS
ACQUAINT
ACQUITTED
ACCESSIBLE
ACCIDENTALLY
ACHIEVE
ACCOMMODATE
ACCRUED
ACCURACY

VOCABULARY CROSSWORD PUZZLE



ACROSS CLUES:

1. To make shorter
2. Perfectly; completely; wholly
4. To admit to be true or as stated; confess
6. Going or being together with; attending
8. To pile up, collect, or gather together over a period of time
9. Extra; additional; helping in an unlawful act
10. To make familiar by custom, habit, or use
11. From one side to the other
12. To let know; give knowledge to; make aware; inform
13. Released from a duty, obligation, etc.; cleared of a charge

DOWN CLUES:

1. The condition of being absent, or away
2. That can be approached or entered; obtainable
3. Happening by chance; fortuitous
5. To do; succeed in doing; accomplish
6. To make fit; adjust; adapt; to do a service or favor for
7. Added periodically as an increase
8. The quality or state of being accurate or exact; precision

BUILDING VOCABULARY SKILLS

CONTRIBUTOR:
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Objectives:

- The student will improve vocabulary skills through systematic study and emphasis on words.

Procedures:

- Select groups of words to study. Use the sample crossword puzzle dealing with synonyms to reinforce vocabulary skills.

Materials needed:

- Handout: SYNONYM CROSSWORD PUZZLE
- Crossword Magic (available through: Mindscape, Inc., 3444 Dundee Road, Northbrook, IL 60062)

Comments:

- The following article (BUILDING VOCABULARY SKILLS) contains many suggestions for helping students improve their vocabulary.
- Reprinted with permission from BIZ ED EXCHANGE, Spring 1987 edition, Business Education Center newsletter, Cal Poly, Pomona.

Answer:

```
          HOLY
     S    O
  POVERTY B SECURE
  A  N   LOOK     R
  T  D      I  HOME
 GIFT  STUDENT    C
  E    M    N   H K
  N C LADY  Y   U L
  C A  R     BARRIER
 PERSIST        R S
 R  H H    HEARTY S
COUP MOB     V H
 L  G U PAIN E I
MODEL L E    R N
 N  ORDER  B A K
 G  O   SAYING
  NAME  U  D E
    Y SMALL
        D
   INSANE
```

Word List:

Average
Barrier
Bid
Cash
Coup
Gift
Gloomy
Hearty
Hobo
Holy
Home
Hurry
Insane
Lady
Look
Mob
Model
Name
Order
Pain
Patience
Persist
Persuade
Poverty
Prolong
Reckless
Saying
Secure
Send
Skinny
Should
Small
Smart
Student
Think

BUILDING VOCABULARY SKILLS

Business education teachers need to increase the emphasis they place on the development of language arts skills. If we are to seek academic graduation credit in language arts for some of our business classes, we must insure that the time we spend on vocabulary development is as effective as the time spent in a regular language arts class. We need to go about vocabulary development systematically. Without a plan, student vocabularies grow very little or sporadically at best.

We all increase the size of our vocabulary daily. We learn the name of a new food; hear about a new country (one previously unknown to us) in the news; hear about a new disease; correct the way we pronounce a word, or learn to use it more precisely. Our vocabulary comes from our experiences and from the organizing and reorganizing of those experiences. We use decoding skills we have learned--and the transfer of knowledge of prefixes, suffixes, and roots--to increase the number of words we can use effectively. Many experts claim that the range and depth of a person's vocabulary is the best single indicator of his/her mental development.

Since our primary responsibility is to teach the concepts and skills of business, most of the vocabulary development we do, of necessity, has something to do with business. We should also look around and relate the new words we teach students to the rest of the world as well. Here are some suggestions that you may find helpful as you go about the business of enriching student vocabulary.

Plan. Develop clear-cut, specific goals and objectives. Focus on activities that help to make the students word-conscious and that extend their use of words.

Proceed From the Known to the Unknown. Provide students with the opportunity to build new concepts upon old ones. Provide study material that makes effective use of the principle of transfer.

Help Students Develop a Flexible Mental File. The more prefixes, suffixes, and roots a student has learned, the greater his/her capacity for filing, remembering, and figuring out the meaning of words.

Use the Dictionary Judiciously. Having the entire class look up the same words on an assignment is guaranteed to "turn students off" to vocabulary development. Also, the value of defining a word by writing it in a sentence has been greatly overrated. Use media aids and a variety of activities to help students learn new meanings and to generate enthusiasm for the learning.

Use the Content-Clue Method. We learn new words (written or spoken) through their use in context. Most of the time we approach a new word with partial knowledge of it. For instance, we know that the prefix "sub" means

BUILDING VOCABULARY SKILLS (continued)

"under". We are familiar with its use in the word submarine. If we are told that the word terrain means ground, it is an easy step for us to figure out that the word subterranean means underground. In the beginning, we need to call these clues to the attention of students. As they grow more used to analyzing words in this way, they will eventually look for context clues automatically and on their own.

Vocabulary and Critical Thinking. Many words have strong and unfavorable connotations. Some words have come to have slanted, emotion-laden meanings. A critical reader is one who is aware of the various aspects of word influence and reacts accordingly. One of our goals should be to sharpen the student's critical thinking processes. There are many areas of consumer economics, business ethics, and career awareness around which activities could be structured to do this.

Use a Variety of Word Development Techniques. Variety makes learning interesting. Use a variety of word development techniques with each unit of instructional material you introduce. Students enjoy word games and learning the origin of words or figures of speech. The systematic introduction of synonyms, antonyms, homonyms, prefixes, suffixes, and roots through exercises can also strengthen student vocabulary.

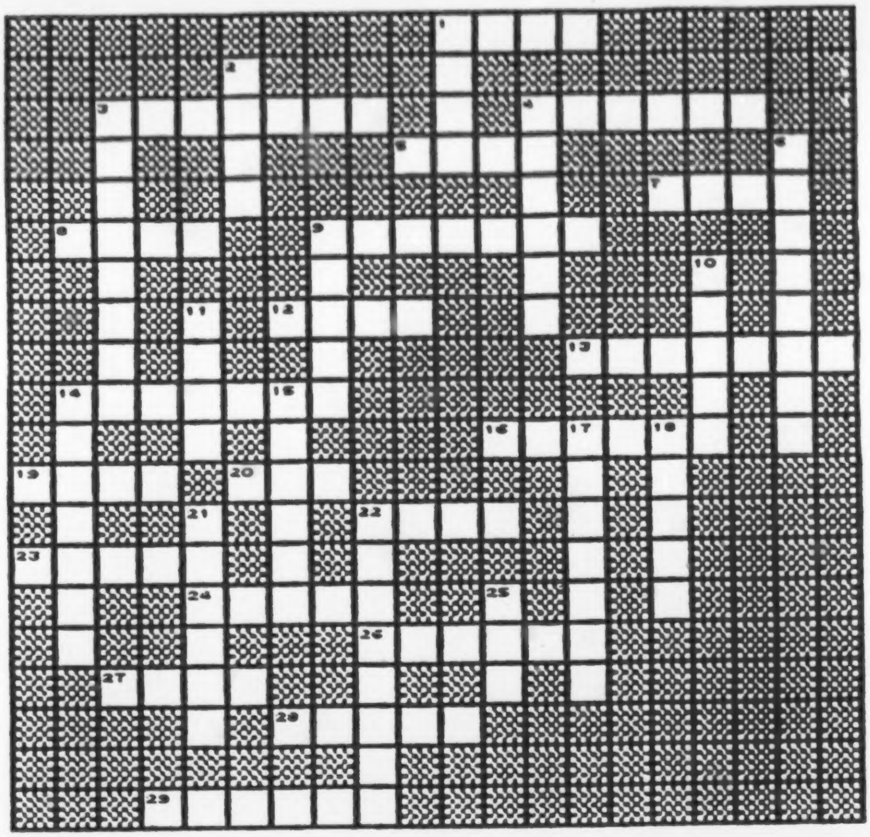
Teach students literary allusions to the classics, biblical and mythological allusions, and the Greek, Latin, and Anglo-Saxon meanings of prefixes, suffixes, and roots upon which much of the English language is based.

When we help students increase their vocabularies, we are changing their lives. We need to help them see that vocabulary is an indicator of the nature and quality of their lives. It tells us what they have studied, where they have been, and the subtleties and refinements of their thought processes. Learning words is an on-going part of life, a never-ending process of intellectual development. Helping students increase their vocabularies will help them get their "foot in the door," whether it is entry-level employment or advancement to postsecondary study.

BIBLIOGRAPHY

Dale, Edgar, and Joseph O'Rourke. Techniques of Teaching Vocabulary, 1971, Field Educational Publications, Inc., Palo Alto, CA.

SYNONYM CROSSWORD PUZZLE



ACROSS:

1. sacred
3. destitute
4. to make safe
5. espy
7. abode
8. donation
9. scholar
12. woman
13. obstacle
14. to continue
16. robust
19. to overturn a govt.
20. crowd
22. suffering
23. facsimile
24. command
26. adage
27. cognomen
28. minute
29. mad

DOWN:

1. drifter
2. transmit
3. forbearance
4. slim
6. foolhardy
9. intelligent
10. expedite
11. money
14. to draw out
15. ought
17. mean
18. cogitate
21. morose
22. to prevail on
25. proposal

Business English/ Communications

Category 2

EDIT TEXT USING PROOFREADER'S MARKS

CONTRIBUTOR:
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Objectives:

- The student will use appropriate proofreader's marks to indicate the necessary corrections on selected material.

Procedures:

- Distribute the handout on proofreader's marks and instruct students to follow the directions. (Note: Supply the student's copy without the proofreader's marks. Item 14 will have the delete mark.)

Materials needed:

- Handout: PROOFREADER'S MARKS
- Teacher's key:

MEANING	CORRECTION
1. Transpose letters or words.	to accurately keyboard
2. Delete copy.	Omit extra ~~extra~~ words.
3. Insert copy.	Always proofread you‸r copy.
4. Close up horizontally.	Proof read carefully.
5. Insert space.	You helped a‸lot. #
6. Capitalize.	Washington, d.c.
7. Use lowercase letter(s).	Chamber Of Commerce
8. Insert or use a period.	You corrected all errors⊙
9. Spell out.	③ errors corrected
10. Move to left.	incorrectly placed to right
11. Move to right.	incorrectly placed to left
12. Begin new paragraph	.... you read. ¶ Thanks for your...
13. Correct misspelled word.	monthly calander SP
14. Leave as was, ignore correction.	work ~~very~~ carefully.
15. Double space.	DS Begin today to proofread all of your work.

PROOFREADER'S MARKS

Directions: For each item in the second column (CORRECTION) below, use the correct proofreader's mark for the MEANING given in the first column.

MEANING	CORRECTION
1. Transpose letters or words.	to accurately keyboard
2. Delete copy.	Omit extra extra words.
3. Insert copy.	Always proofread you copy.
4. Close up horizontally.	Proof read carefully.
5. Insert space.	You helped alot.
6. Capitalize.	Washington, d.c.
7. Use lowercase letter(s).	Chamber Of Commerce
8. Insert or use a period.	You corrected all errors,
9. Spell out.	3 errors corrected
10. Move to left.	incorrectly placed to right
11. Move to right.	incorrectly placed to left
12. Begin new paragraph	.... you read. Thanks for your...
13. Correct misspelled word.	monthly calander
14. Leave as was, ignore correction.	work ~~very~~ carefully.
15. Double space.	Begin today to proofread all of your work.

HOW TO TEACH COMPUTER TERMINOLOGY IN THE NON-COMPUTER COURSE USING THE CLUSTERING WRITING STRATEGY

CONTRIBUTOR:
Ms. Ella Fisher
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and/or
Central Piedmont Community College
Charlotte, NC 28235

Objectives:

- The student will improve written communication skills using computer terminology.

Procedures:

- Distribute handouts to students similar to those shown:
  - (a) a clustering writing strategy (silicon chip)
  - (b) a writing page (draft and final copies)
- Pass around one or more silicon chips for students to examine and study.
- Conduct a class discussion about the silicon chip.
- Brainstorm to fill clusters on handout: CLUSTERING: A WRITING STRATEGY
  - (a) cluster above "silicon chip" should be filled with descriptive words about the chip--physical size, kilobyte size, color, construction, contents, etc.
  - (b) cluster below "silicon chip" should be filled with connective or related words to contribute to a well written paragraph--where made, where used, how used, importance, etc.
- Provide students with guidelines for writing paragraph:
  - (a) strong topic sentence
  - (b) at least three or more supporting sentences
  - (c) summary sentence
- Time students for draft copy (7 minutes).
- Time students for editing draft copy (4 minutes).
- Time students for final copy (7 minutes).

Comments:

- Other terms may be substituted for "silicon chip."
- The exercise may be extended to a 5-paragraph theme.
- Other writing strategies may be used, such as:
    - (a) Cubing--Cubing is a technique for swiftly considering a subject from six points of view.
    - (b) Mapping--Mapping is a technique of getting things visually on paper in categories--graphic representation; it is best used for elaboration.
- If microcomputers are available, students may key the paragraph, using a word processor or the DOS Copy Con Command

Terminology:

- The cluster writing strategy gives the student a "center" around which a paragraph or theme may coalesce. It does not restrict the scope of elaboration, and it may involve word association.

****

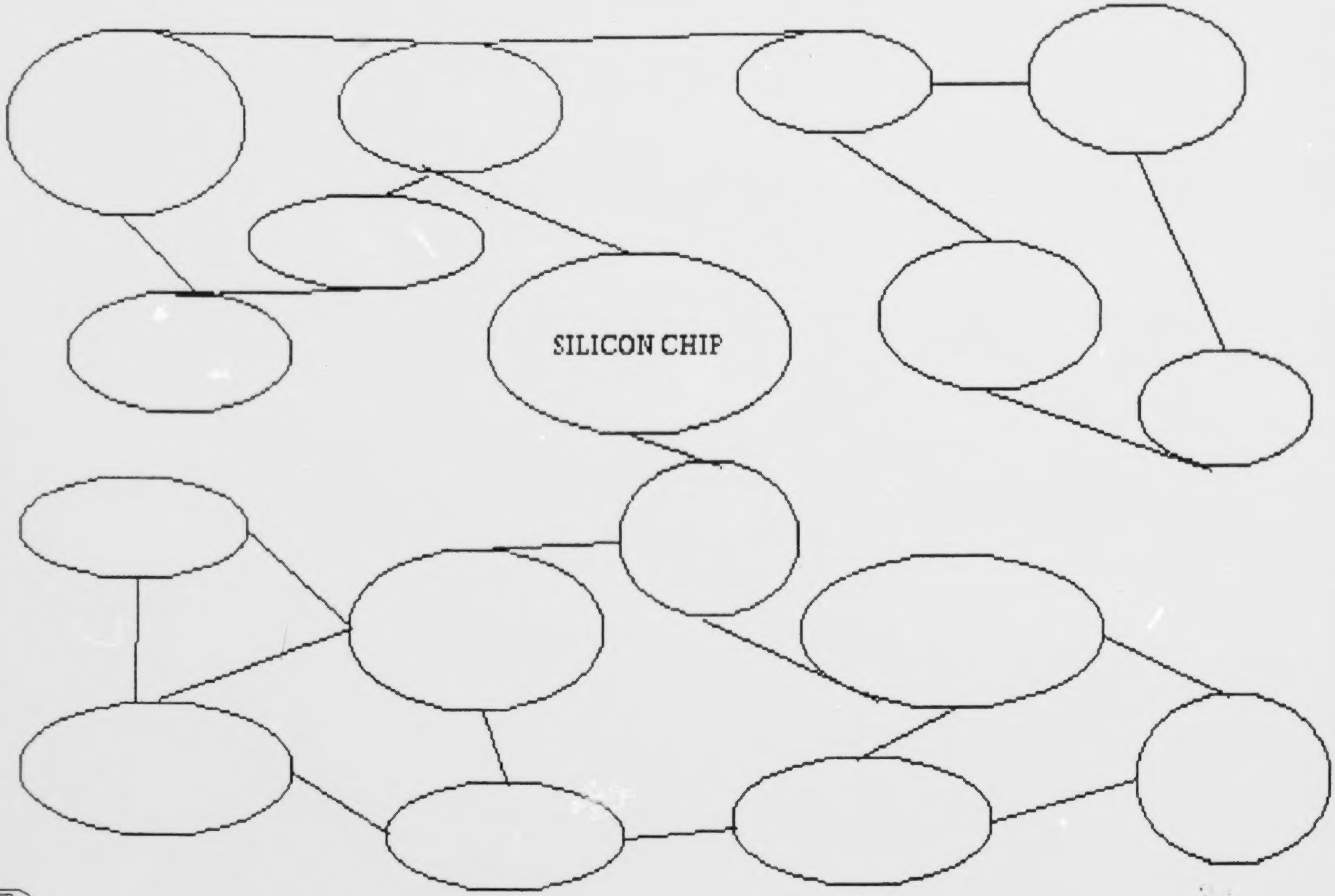
(Note: This handout should be rekeyed on a full sheet of paper.)

WRITE A DESCRIPTIVE PARAGRAPH ABOUT THE SILICON CHIP

DRAFT COPY:

FINAL COPY:

CLUSTERING: A WRITING STRATEGY


SILICON CHIP

Business English/Communications

PROOFREADING/TRANSCRIPTION--LETTER

CONTRIBUTOR:
J. H. Jackson
Virginia Commonwealth University
Richmond, VA 23284

Objectives:

- The student will learn to proofread and locate errors.

Procedures:

- Give students the handout PROOFREADING LETTER and instruct them to follow the handout directions.
- After students complete the drill, exchange papers, grade, and discuss as time permits.

Materials needed:

- Handout: PROOFREADING LETTER (February line not numbered.)

Comments:

- Using a word processing program, the teacher could key the proofreading letter and save it on a diskette. The students could correct the letter on the diskette and print a corrected hard copy.

Key: Febuary 14, 1990

Mrs. Winston H. Ross, Secretary
Avondale Manufacturing Company
4700 High Street
Columbus, Oh 43210

Dear Mr. Ross:

Many firms spend thousands of dollars annnually to purchase find stationary ery which will carry the the image of there company to it's readers.

Many Much of them insist on expensive papers and print that is eligible legible and up-to-date. Some require a letter head into two colors ~~and~~ of a highly artistic nature. This touch of of individuality, they feel, will create a lasting imporession on their public and leave an feeling of confidence in there firm.

Irregardless of the amount of capitol a compant is willing to spend on it's stationary, supplies, and etc., we are experts in this feild and are in a position to advice you when you are again ready to by. Our company has just moved in to a knew Broad Street location and have all the faculties facilities to show you our complete line of office supplys. Past Experience has showed us that many of our customers like to shope after they close their own offices, therefore, we are open from 9 a.m. ~~in the morning~~ until 9 p.m. ~~in the evening~~.

During March we will have a special exibit of high-quality papers at discount prices. We intite you too visit us at our new location.

We look forward to seeing you soon.

Very truley yours,
Mr. J. L. Jordan, Maneger

Encl

PROOFREADING LETTER

Directions: Proofread the following letter--locate and circle the errors; do not correct them.

Febuary 14, 1990

1 Mrs. Winston H. Ross, Secretary
2 Avondale Manufacturing Company
3 4700 High Street
4 Columbus, Oh 43210

5 Dear Mr. Ross:

6 Many firms spend thousands of dollars annnually to purchase find stationary which will
7 carry the the image of there company to it's readers.
8 Much of them insist on expensive papers and print that is eligible and up-to-date. Some
9 require a letter head into colors and of a highly-artistic nature. This touch of of
10 individuality, they feel, will create a lasting imporession on their public and leave an
11 feeling of confidence in there firm.
12 Irregardless of the amount of capitol a compant is willing to spend on it's stationary,
13 supplies and etc., we are experts in this feild and, are in a position to advice you when
14 you are again ready to by.
15 Our company has just moved in to a knew Broad Street location and have all the
16 faculties to show you our complete line of office supplys. Past experience has showed us
17 that many of our customers like to shope after they close their own offices, therefore, we
18 are open from 9 a.m. in the morning until 9 p.m. in the evening.
19 During March we will have a special exibit of high-quality papers at discount prices. We
20 intite you too visit us at our new location.
21 We look forward to seeing you soon.
22 Very truley yours,

23 Mr. J. L. Jordan, Maneger
24 Encl

Source: Jackson, J. Howard and Spring, Marietta. METROWORD, INC.--Machine Transcription for the Word Processing Specialist, Copyright 1986 by South-Western Publishing Co. All rights reserved. Reprinted with permission of the publisher.

PROOFREADING/TRANSCRIPTION–SENTENCES

CONTRIBUTOR:
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Objectives:

- The student will improve written communication skills by identifying correctly and incorrectly written sentences.

Procedures:

- Give students the handout PROOFREADING DRILL and instruct them to follow the handout directions.
- After students complete the drill, exchange papers, grade, and discuss as time permits.

Materials needed:

- Handout: PROOFREADING DRILL

Comments:

- The teacher could put the proofreading drill on software and have the students correct the drill and produce a corrected hard copy.
- For reference on the rules, teachers can check: Tilton, Jackson, & Popham, Secretarial Procedures and Administration, 9th Edition, Cincinnati: South-Western Publishing Company, 1987, Reference Guide.

Key:

X 1. Our association will hold it's annual meeting in Dallas.
X 2. All entries must in our office before November 31.
X 3. We appreciate you coming to the meeting.
C 4. It is all right to change your mind.
C 5. If we accede to his wishes, we will exceed our budget for the year.
C 6. These regulations supersede the instructions given by the branch manager.
X 7. Our shop closes ar 6 p.m. ~~in the evening~~.
X 8. George is a brunette; his sister is a blond.
C 9. We have less money to spend this year.
C 10. A reduced budget means fewer books in each subject.
C 11. It is not convenient to answer the letter today.
C 12. Express mail is more expensive than parcel post.
C 13. Reduce the prices immediately.
X 14. Irregardless of our choice of a leader, progress will be limited.

Key: continued

X 15. We hold these truths to be self evident.
X 16. Many of of the members did not vote.
X 17. I have been happy here_but I would like to retire to Texas.
X 18. Do not give an opinion until you have had a similiar problem.
X 19. Neither the principal nor the students' parents knew about the accident_
C 20. Keep off the grass!
X 21. We cannot refill the presription without the approval of Dr. Smith.
C 22. Please consider our proposal and respond by June 30.
C 23. Thank you for your letter of October 1.
X 24. We have you're letter of October 16.
X 25. The packet contains 6 25-cent stamps.
X 26. Mary is an alumnus of Georgia College for Women.
X 27. Sit the case down and let it lay until the van comes.
X 28. Mr. Halderman was President Nixon's chief confidante in the White House.
X 29. Governor Ward's office is in the east wing of the capital.
C 30. I subscribe to three local newspapers.
C 31. We will use three 50-foot boards to complete the project.
C 32. Call the police!
X 33. 30 years ago in Chicago, there were no subways.
C 34. Dividends were paid on Wednesday, November 6; Thursday, February 8; and Friday, May 14.
C 35. The principal on the loan must be paid by January 1, 1993.
X 36. The world is full of looker-ons who will not risk failure.
X 37. The committee will meet on June 12th and July 16th.
C 38. Travel is hard work; therefore, complete rest is necessary if one is to avoid jet lag.
X 39. We can accomodate only four more participants.
X 40. The poet wrote, "The sound of vesper bells bespoke the end of day".
X 41. It is alright to cash the check today.
X 42. We are greatful for your assistance.
C 43. We found four small kittens; they were grey, brown, black, and white.
C 44. The ladies in the chorus are former models.
C 45. The children's toys were purchased by local merchants.
X 46. He has called a meeting for February 30, 1988.
C 47. We will offer several items at reduced prices--chairs, lamps, and pictures.
X 48. Refer back to our memorandum of October 14.
X 49. There are many verses in the koran that parallel the bible.
X 50. Where are you going for for the Easter holidays?

PROOFREADING DRILL

Directions: Each of the following sentences is taken from actual correspondence. Half of the sentences contain at least one error. Read each sentence carefully, then mark a c before those that are correct and an x before those that are incorrect. Circle any errors.

______ 1. Our association will hold it's annual meeting in Dallas.

______ 2. All entries must in our office before November 31.

______ 3. We appreciate you coming to the meeting.

______ 4. It is all right to change your mind.

______ 5. If we accede to his wishes, we will exceed our budget for the year.

______ 6. These regulations supersede the instructions given by the branch manager.

______ 7. Our shop closes ar 6 p.m. in the evening.

______ 8. George is a brunette; his sister is a blond.

______ 9. We have less money to spend this year.

______10. A reduced budget means fewer books in each subject.

______11. It is not convenient to answer the letter today.

______12. Express mail is more expensive than parcel post.

______13. Reduce the prices immediately.

______14. Irregardless of our choice of a leader, progress will be limited.

______15. We hold these truths to be self evident.

______16. Many of of the members did not vote.

______17. I have been happy here but I would like to retire to Texas.

______18. Do not give an opinion until you have had a similiar problem.

______19. Neither the principal nor the students' parents knew about the accident

______20. Keep off the grass!

______21. We cannot refill the presription without the approval of Dr. Smith.

______22. Please consider our proposal and respond by June 30.

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______24. We have you're letter of October 16.

______25. The packet contains 6 25-cent stamps.

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______27. Sit the case down and let it lay until the van comes.

______28. Mr. Halderman was President Nixon's chief confidante in the White House.

______29. Governor Ward's office is in the east wing of the capital.

______30. I subscribe to three local newspapers.

______31. We will use three 50-foot boards to complete the project.

______32. Call the police!

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______34. Dividends were paid on Wednesday, November 6; Thursday, February 8; and Friday, May 14.

______35. The principal on the loan must be paid by January 1, 1993.

______36. The world is full of looker-ons who will not risk failure.

______37. The committee will meet on June 12th and July 16th.

______38. Travel is hard work; therefore, complete rest is necessary if one is to avoid jet lag.

______39. We can accomodate only four more participants.

______40. The poet wrote, "The sound of vesper bells bespoke the end of day".

______41. It is alright to cash the check today.

______42. We are greatful for your assistance.

______43. We found four small kittens; they were grey, brown, black, and white.

______44. The ladies in the chorus are former models.

______45. The children's toys were purchased by local merchants.

______46. He has called a meeting for February 30, 1988.

______47. We will offer several items at reduced prices--chairs, lamps, and pictures.

______48. Refer back to our memorandum of October 14.

______49. There are many verses in the koran that parallel the bible.

______50. Where are you going for for the Easter holidays?

SPEAK NOT INTO THE AIR

CONTRIBUTOR:
J. H. Jackson
Virginia Commonwealth University
Richmond, VA 23284

Objectives:

- The student will review redundant phrases.

Procedures:

Variations:

- List several phrases from the handout on the board each week. If a class member says one of the phrases, the person hearing the phrase gets a token. Who has most tokens at end of week?
- Bonus points can be given to students bringing in newspaper or magazine articles with such phrases marked.
- Some word processing software programs can be made to highlight (such as a Spell Check feature) these phrases as a reminder to students. Students can input the phrases and program the Spell Check feature.

Materials needed:

- Handout: SPEAK NOT INTO THE AIR

* * *

FOREIGN OR ENGLISH WORD?

CONTRIBUTOR:
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Objectives:

- The student will learn to recognize whether selected words are English or foreign.

Procedures:

Variations:

- Have students prepare a glossary of terms by looking up the meaning of words in a dictionary and key the definitions using a word processing program.
- Have a spelling "bee" on the words.

Materials needed:

- Handout: IS THAT WORD FOREIGN OR ENGLISH?
- Reference materials

SPEAK NOT INTO THE AIR...

ADVANCE WARNING

MUTUAL COOPERATION

PAST HISTORY

FINAL COMPLETION

LOCAL RESIDENT

ANGRY CLASH

AWKWARD PREDICAMENT

ORIGINAL SOURCE

PROPOSED PLAN

DOCTORATE DEGREE

YOUNG INFANT

DAY DAWNED IN THE EAST

CLOSE PROXIMITY

ROUND IN SHAPE

PASSING FAD

GRACEFUL IN APPEARANCE

GENERAL PUBLIC

FULL SATISFACTION

END RESULT

DEFINITE DECISION

GOOD BENEFIT

WIDOW OF THE LATE

VIOLENT EXPLOSION

TOTAL EXTINCTION

NEW RECRUIT

WIDOW WOMAN

WEATHER CONDITIONS

UNDERGRADUATE STUDENT

USUAL CUSTOMS

ANTHRACITE COAL

FELLOW COLLEAGUES

STRANGLED TO DEATH

FRESH START

FILLED TO CAPACITY

GRATEFUL THANKS

BISECT IN TWO PARTS

FEW IN NUMBER

BIOGRAPHY OF HIS LIFE

DEPRECIATED IN VALUE

BIG IN SIZE

ADEQUATE ENOUGH

AS NEVER BEFORE IN PAST HISTORY

CAPITOL BUILDING

ENTIRELY COMPLETE

FROWN ON HIS FACE

SHUTTLE BACK AND FORTH

SERIOUS DANGER

BARRACKS BUILDING

IMPORTANT ESSENTIALS

SURGEON BY OCCUPATION

NEW BEGINNING

PREJUDGE IN ADVANCE

COMPLETE MONOPOLY

BLUE IN COLOR

FIRST PRIORITY

APPOINTED TO THE POST

IS THAT WORD FOREIGN OR ENGLISH?

Completely Anglicized Words

abaca
aide memoire
a la carte
a la king
a la mode
angstrom
apertif
applique
apropos
auto(s)-da-fe
blase
boutonniere
brassiere
cabana
cafe
cafeteria
caique
canape
cause celebre
chateau
cliche
cloisonne
comedienne
communique
confrere
consomme

cortege
coulee
coup de grace
coup d'etat
coupe
creme
crepe
crepe de chine
debacle
debris
debut
debutante
decollete
dejeuner
denouement
depot
dos-s-dos
eclair
eclat
ecru
elan
elite
entree
etude
facade
faience
fete

fiance (masc., fem.)
frappe
garcon
glace
grille
gruyere
habitue
ingenue
jardiniere
litterateur
materiel
matinee
melange
melee
menage
mesaliance
metier
moire
naive
naivete
nee
opera bouffe
opera comique
papier mache
piece de resistance
pleiade
porte cochere

porte lumier
portiere
pousse cafe
premiere
protege (masc., fem.)
puree
rale
recherche
regime
risque (masc., fem.)
role
rotisserie
roue
saute
seance
senor
smorgasbord
soiree
souffle
suede
table d'hote
tete-a-tete
tragedienne
vicuna
vis-a-vis

Unassimilated Foreign Words

à l'américaine
attaché
béton
blessé
calèche
cañada
cañon
chargé

chargé d'affaires
congé
crédit foncier
crédit mobilier
curé
détente
doña
entrepôt

exposé
longéron
mañana
maté
mère
nacré
outré
passé (masc., fem.)

pâté
père
piña
précis
raisonné
résumé
touché

Source: U. S. Government Printing Office "Style Manual," revised edition, 1973. For sale by Superintendent of Documents, Washington, DC 20402.

RESEARCH PAPER PREPARATION

CONTRIBUTOR:
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Benton Harbor, MI 49022

Objectives:

- The student will prepare a research paper using a word processor according to the following steps:

  1. Review/study steps in preparing a research paper.
  2. Select an appropriate topic.
  3. Gather information pertaining to topic selected.
  4. Organize information--prepare a topic outline.
  5. Analyze information to make sure there is enough information; the information is clear; and it is grouped together correctly.
  6. Prepare a first draft.
  7. Evaluate the first draft, make revisions, and prepare a final draft.

Procedures:

- Review:

  1. Punctuation, writing, and library usage skills have been reviewed.
  2. The typing format for the outline, first and final drafts, have been explained.
  3. Capabilities of word processing program have been reviewed.
  4. Students have previously received typing and word processing instruction.

- Presentation/Teacher Activities: (Refers to Objective numbers.)

  1. Explain the steps in preparing a research paper (topic selection, gathering information, organizing information, analyzing information, preparing first draft, revising, and preparing final draft).
  2a. List and explain guidelines students should use to select topic.
  2b. Have students select a topic and write a short paragraph explaining their point of view or position.
  2c. After reading students' paragraphs explaining what they plan to write about and the topics they selected, meet with individual students to make comments and recommendations.
  3a. Take students as a group to the library to obtain information about the topic they selected.

3b. Assist students in selecting appropriate information.
4a. Explain how to write a topic outline.
4b. Review typing format students should use for topic outline.
4c. Take students to computer lab to enter and print outlines.
5a. Using the outline as a guide, have students group the information under the main or secondary topics. This will provide a method to make sure that enough information has been gathered and the information is clear and supports the main or secondary topics.
5b. Take students to the computer lab to make a hard copy of the outline with the information grouped by main or secondary topics.
5c. After reading outlines with the information grouped by main or secondary topics, meet with individual students to discuss their outlines and information.
6. Take students to the computer lab to enter and print their first drafts. Depending upon the ability of the students, the amount of time available, and the availability of computers and printers, students may or may not prepare a written rough draft before entering the first draft.
7a. Read first drafts, have conferences with individual students, make recommendations for improvements, and return papers.
7b. Take students to the computer lab to make revisions to first draft and print final draft. (This step may be repeated several times depending on the ability of the students, the amount of time available, and the availability of computers and printers.)

- Exercise/Student Activities: (Refer to Objective numbers.)

1. Discuss the steps in preparing a research paper.
2a. Copy list of guidelines to use in selecting topic for research paper. Select a topic using these guidelines.
2b. Using a word processing program, create/enter and print the topic selected for the research paper and a short paragraph explaining emphasis of paper and their point of view or position.
2c. After meeting with the teacher, use the word processing program to revise the paragraph. Print two copies--one for the teacher and one for the student.
3. Collect information from school library, public library, personal resources, etc. to use to help prepare and support the writing of the report.
4. Using a word processing program, create/enter and print topic outline using the guidelines and typing format discussed in class.
5. Using a word processing program, retrieve the topic outline created earlier and insert information gathered grouping the information by main or secondary topics on outline. Save this document under a different name. Print two copies--one for the teacher and one for the student.

6. Using a word processing program, enter in first draft. Print a copy of the report and give it to the teacher.
7a. After the first draft has been read and returned and conference held with teacher, use proofreader's marks to indicate necessary revisions.
7b. Using a word processing program, retrieve the first draft document and make all necessary revisions. Print a copy of the report and give it to the teacher.

Materials needed:

- Word processing software and manual
- Typing text that has research paper format guidelines
- Text or other materials that explain the steps in preparing a research paper

Comments:

- The steps listed in the "Exercise/Student Activities" can be used to prepare the students' directions.
- Using a word processing program will make preparing and writing reports much easier and more fun. Students will spend more time working on what and how something is written instead of just writing everything over and over again. Students will be more likely to make major revisions because it will be so easy.

MIND MAPPING

CONTRIBUTOR:
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Objectives:

- The student will investigate the technique of mind mapping.

Procedures:

- The student gains a background on a specific topic through research and/or lecture presentations and class discussions.

- After students have gained the body of knowledge related to a specific topic, they are ready to use the mind mapping technique to express their thoughts and organize their writing.

- Give each student a copy of the MIND MAPPING TECHNIQUES handout and "walk through" the procedure with them.

- Assign each student a partner.

Materials needed:

- Colored pens for each student

- Word Processing software, computer, and printer

Comments:

- The technique of mind mapping can be applied across the curriculum. This technique may be used in any course on any topic. Topics such as goal setting and time management work well with this technique.

MIND MAPPING TECHNIQUES

STAGE 1:

Key in your random thoughts about your assigned topic as they occur. Make no effort to organize your thoughts at this point. Let the thoughts flow and then begin to key in ideas. Keep the thoughts going as far as you can.

Print out.

STAGE 2:

Use color pens to circle areas that connect as a way to outline your thoughts.

STAGE 3:

Refer to notes on topic through reading, lecture, and/or discussions.

STAGE 4:

Write topic sentence before developing each paragraph.

STAGE 5:

Write summary paragraph.

STAGE 6:

Proof carefully for clarity, conciseness, and completeness. Use spell check.

STAGE 7:

Print Draft I.

STAGE 8:

Exchange Draft I with your partner. Have partner edit and suggest improvements for clarity, conciseness, and completeness.

STAGE 9:

Return Draft I to partner. Edit and correct your document as Draft II.

STAGE 10:

Print out Draft II. Proofread and correct as needed. Follow your teacher's instructions for turning in your completed exercise.

BUSINESS LETTER WRITING PROJECT

CONTRIBUTOR:
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Winston-Salem, NC 27104

Objectives:

- The student will improve his/her business communications skills through handwritten and computer-assisted revisions.

Procedures:

- Students in the communications class compose letters on selected topics during a five- to seven-day period. The first letter is composed and rewritten in longhand, if needed, on the first day. Letters are returned and lines containing errors are indicated by check marks in the margin. No clues to the errors are given; however, a student may ask another student to help locate errors. Students then rewrite the letter, correct errors, and attach the rewrite to the original letter so that grading can be done fairly.
- First drafts of letters that are entirely correct get the highest grade. Rewrites with first draft attached get lower marks. Students may rewrite a letter twice for a grade of "C." After the third rewrite, the student may get help from the teacher in locating errors and in correcting the wording. At this point, the student cannot make a grade higher than a "D."
- On the fifth day of the project, students are taken to the computer lab and are instructed in the use of a word processing program. They key their letters using the computer. The printout of the letter is graded as the others have been. The next day students make corrections on the disk and reprint their letters. After three to four days of rewriting letters by hand, students are able to judge for themselves the ease of making corrections on the computer.

Materials needed:

- Word processing software

Comments:

- Students do not need to be typists in order to use the computer in this project. The students see quickly, however, the speed with which the typists in the class complete their work. The immediate feedback from the teacher and the requirement of error correction make students more error conscious. They become more willing to use the reference materials in the classroom.
- For variation to this project, students could use computers from the start of the project and create their own personalized letterhead using the computer.

Accounting/ Bookkeeping/ Recordkeeping

Category 3

APPLYING MANUAL ACCOUNTING TRANSACTIONS TO A COMPUTERIZED ACCOUNTING SYSTEM

CONTRIBUTOR:
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Kinston, NC 28501

Objectives:

- The student will analyze accounting transactions, prepare input forms, and key accounting transactions.

Procedures:

- Have students use a computer software program while following a procedures sheet with transactions from manual accounting problems.

- Use the problems from "Century 21 Accounting" (3rd Edition) and "Automated Accounting for Microcomputers." Load the program into the computer and begin with #1 from the handout COMPUTER PROJECT PROCEDURES.

Materials needed:

- Handout: COMPUTER PROJECT PROCEDURES

- "Automated Accounting for Microcomputers" (1st Edition) software program by SouthWestern Publishing Company or similar software program
- IBM or IBM compatible microcomputer
- Printer

Comments:

- This same idea could be applied using the "canned" software programs and transactions from other manual accounting materials.

COMPUTER PROJECT PROCEDURES

1. Bring up the System Selection Menu.
2. Select Option 1 to set RUN DATE, COMPANY, & STUDENT NAME. (Page 109)
3. Return to System Selection Menu and select GENERAL LEDGER.
4. Create an Empty Chart of Accounts Master File.
5. Key-enter the Chart of Accounts. (Page 109)
6. Print the Chart of Accounts.
7. In the Run-Time Options, set the TYPE OF BUSINESS to a sole proprietorship (S).
8. Set the accounts in the Run-Time Options to the following:

Income Summary	33
Anthony Wilson, Capital	31
Anthony Wilson, Drawing	32

9. Key-enter the journal entries to bring forward the beginning account balances. (Use Balance Sheet, Page 110.)
10. Print a proof of the journal entries.
11. Make corrections, if necessary.
12. Post the journal entries.
13. Print a trial balance.
14. At your desk, record the transactions from October 1-31 on pages 110-114 using a Cash Receipts Input Form and a Cash Payments Input Form.
15. Key-enter the journal entries on the Cash Receipts Input Form (Sheet #3) and the Cash Payments Input Form (Sheet #4).
16. Print a journal entries proof.
17. Make corrections to journal entries, if necessary.
18. Post the journal entries.
19. Print a trial balance.
20. Print an income statement.
21. Print a balance sheet.
22. Perform the period end closing.
23. Print a trial balance.

Consumer Economics/ Personal Finance/ Business Math

Category 4

BUSINESS COMPUTER APPLICATIONS

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Objectives:

- COMPUTER SCRAMBLE USING INSURANCE TERMS: The student will unscramble insurance terms by reading clues provided by the computer and determining the correct term.
- USING A COMPUTER TO FIGURE COMPOUND INTEREST: The student will understand the difference in interest payments based upon the rate being compounded semi-annually, quarterly, monthly, weekly, or daily.
- GRAPHIC ILLUSTRATION OF RELATIONSHIP OF LIFETIME INCOME BASED UPON EDUCATION LEVEL: The student will understand the relationship between quality of living (income) and education level.
- INSURANCE--DEMONSTRATION OF PERCENTAGE OF ACCIDENTS ACCOURDING TO AGE GROUP: The student will use the computer to compute percentage of accidents per age group based upon raw data that is provided by the teacher.

Procedures:

- Have students key the programs into the computer and then run them.

  OR

- The teacher can key the programs into the computer, save them to disk, and then have students load and run the programs.

Materials needed:

- TRS-80 microcomputer or other microcomputer

Comments:

- Although these programs were written for TRS-80, they can be modified easily to run on other computers.
- USING A COMPUTER TO FIGURE COMPOUND INTEREST: This program helps the student understand how the period of time affects compound interest.
- INSURANCE--DEMONSTRATION OF PERCENTAGE OF ACCIDENTS ACCOURDING TO AGE GROUP: The teacher will need to make up a set of data for each age group or use insurance figures.

COMPUTER SCRAMBLE USING INSURANCE TERMS

```
100   REM ******************************************
110   REM *        INSURANCE          TRS-80       *
120   REM ******************************************
130   REM
140   REM --PROGRAM TO MIX UP WORDS AND HAVE STUDENTS
150   REM   DETERMINE WHAT THEY ARE FROM CLUES
210   CLS
220   PRINT "TRY TO DETERMINE WHAT INSURANCE"
225   PRINT "TERM WE ARE TALKING ABOUT"
230   PRINT "BY USING THE CLUES."
235   PRINT
240   PRINT "KEY IN THE TERM YOU THINK IS CORRECT."
250   FOR Z=1 TO 1000:NEXT Z:CLS
260   INPUT "WHAT IS YOUR NAME ";N$
270   INPUT "HOW MANY TERMS WOULD YOU LIKE TO TRY";NT
280   IF NT>10 THEN PRINT"REENTER--10 TERMS OR LESS PLEASE"FOR
      Z=1 TO 1000:NEXT Z:CLS:GOTO 270
290   RESTORE:FOR X=1 TO NT
300   READ C$,T$,M$
310   IF T$="END" THEN RESTORE:GOTO 300
320   PRINT "YOUR CLUE IS --- ";C$
330   FOR Z=1 TO 1000:NEXT Z
340   CLS
350   PRINT@340,;
360   FOR W=1 TO LEN(M$)
370   PRINT MID$(M$,W,1);" ";
380   NEXT W
390   FOR Z=1 TO 500:NEXT Z
400   CLS
410   PRINT "YOUR ANSWER IS ---";:A$="":INPUT A$
420   IF A$=T$ THEN PRINT "THAT'S GREAT!!":C=C+1
430   IF A$<>T$ THEN PRINT "INCORRECT--THE ANSWER IS ";T$
440   INPUT "PRESS ENTER TO CONTINUE";E$
450   NEXT X
460   PRINT N$", YOU GOT ";C;" CORRECT"
470   INPUT "WOULD YOU LIKE TO TRY ANOTHER (Y/N)";R$
480   IF R$="Y" THEN C=0:CLS:GOTO 270
490   DATA AMOUNT PAID FOR INSURANCE, PREMIUM, MIMRPEU
500   DATA PERSON NAMED TO RECEIVE INSURANCE BENEFITS,
      BENEFICIARY, NEFICBEIARY
510   DATA REQUEST FOR PAYMENT DUE TO LOSS, CLAIM, LAIMC
520   DATA DECREASE IN VALUE OF PROPERTY DUE TO USE & TIME,
      DEPRECIATION, TPECRDEIIONA
530   DATA PROPERTY NOT ATTACHED TO LAND, PERSONAL, SANOPERL
540   DATA NECESSARY FOR CLAIM ON HOUSEHOLD GOODS, INVENTORY,
      TENINYORV
550   DATA RISK OF LOSING SOMETHING OF VALUE, ECONOMIC, COCOMNIE
560   DATA LOSSES NOT COVERED BELOW A CERTAIN AMOUNT,
      DEDUCTIBLE, UCTIDEDBLE
570   DATA INSURANCE WHICH ALLOWS EACH INSURANCE COMPANY TO PAY
      PART OF THE LOSSES, NO FAULT,TAUL-FON
580   DATA END,END,END
```

USING A COMPUTER TO FIGURE COMPOUND INTEREST

```
 10   REM**************************************************
 20   REM*             COMPOUND INTEREST                  *
 30   REM*  WRITTEN FOR THE TRS-80 MODEL I AND III        *
 40   REM**************************************************
 50   REM THIS PROGRAM FIGURES INTEREST COMPOUNDED ON YEARLY
 55   REM SEMI-ANNUALLY, QUARTERLY, MONTHLY, WEEKLY, DAILY, AND
          HOURLY
 60   CLS
 70   PRINT "THIS PROGRAM FIGURES INTEREST COMPOUNDED YEARLY,"
 80   PRINT "SEMI-ANNUALLY, QUARTERLY, MONTHLY, WEEKLY, DAILY,"
 90   PRINT "AND HOURLY."
 95   FOR X=1 TO 2000:NEXT X
100   CLS
110   PRINT "ENTER RATE OF INTEREST - ENTER AS DECIMAL "
120   INPUT "                     10% AS .10";R
130   INPUT "ENTER AMOUNT OF PRINCIPAL";P
140   CLS
150   READ N
160   IF N=0 THEN 250
170   PRINT "COMPOUNDED";N;"TIMES PER YEAR."
180   PRINT "VALUE AFTER 5 YEARS IS ";
190   LET C=5*N
200   PRINT USING "$$##,###.##";P*(1+R/N)[C
210   PRINT
220   FOR X=1 TO 700:NEXT X
230   GOTO 150
240   DATA 1,2,4,12,52,365,8760,0
250   END
```

GRAPHIC ILLUSTRATION OF RELATIONSHIP OF LIFETIME INCOME BASED UPON EDUCATION LEVEL

```
100   REM ***********************************
110   REM *     CAREERS TRS-80 MODEL        *
120   REM ***********************************
130   REM
140   REM --PROGRAM TO DISPLAY A BAR GRAPH SHOWING THE
150   REM   DIFFERENCE IN LIFETIME INCOME FOR PEOPLE WITH
160   REM   VARIOUS LEVELS OF EDUCATION.
210   CLS
220   INPUT "ENTER YOUR NAME PLEASE";N$
230   CLS
240   PRINT TAB(35);"INCOME (THOUSANDS)"
245   PRINT
260   PRINT TAB(25)400;TAB(35)500;TAB(45)600;TAB(55)700
265   PRINT "   LEVEL OF EDUCATION"
270   FOR X=1 TO 3
275   PRINT
280   READ E$,A
285   PRINT
290   C=LEN(E$):PRINT TAB(24-C)E$;
295   D=A*5+27:DW=23
300   FOR Z=29 TO D:PRINT  TAB(DW+1); CHR$(166);:NEXT Z
310   DATA "EIGHTH GRADE   ", 1.7, "HIGH SCHOOL   ", 2.8
320   DATA "COLLEGE   ", 6.7
330   NEXT X
335   FOR W=10 TO 39:SET (47,W):NEXT W
340   FOR Y=47 TO 120:SET(Y,10):NEXT Y
345   FOR Y=47 TO 120:SET(Y,39):NEXT Y
348   C=0
350   FOR X=1 TO 5
360   READ Q$,A$
370   PRINT @ 832,Q$
380   INPUT I$
385   IF I$=A$ THEN C=C+1
390   NEXT X
391   PRINT
392   PRINT
400   DATA "WHAT LEVEL OF EDUCATION GIVES THE HIGHEST LIFETIME
           INCOME:  (A) EIGHTH (B) HIGH SCHOOL (C) COLLEGE",C
410   DATA "WHAT LEVEL OF EDUCATION GIVES THE LOWEST LIFETIME
           INCOME:  (A) EIGHTH (B) HIGH SCHOOL (C) COLLEGE",A
420   DATA "HOW MUCH MORE WOULD BE EARNED (IN THOUSANDS OF
           DOLLARS) BY GOING TO COLLEGE:  (A) 200 (B) 100 (C)
           250",A
430   DATA "WITH AN AVERAGE WORKING LIFE OF 45 YEARS THE ANNUAL
           SALARY OF A HIGH SCHOOL GRADUATE IS ABOUT:  (A) 7000
           (B) 9000 (C) 11000",C
440   DATA "WITH AN AVERAGE WORKING LIFE OF 45 YEARS THE ANNUAL
           SALARY OF A COLLEGE GRADUATE IS ABOUT:  (A) 19000 (B)
           15000 (C) 12000",B
450   CLS:PRINT N$" YOU GOT"C"CORRECT WHICH IS "C/5*100"%"
```

INSURANCE--PERCENTAGE OF ACCIDENTS ACCORDING TO AGE GROUP

```
100  REM ***************************************************
110  REM *        INSURANCE                TRS-80          *
120  REM ***************************************************
130  REM--PROGRAM TO PRINT PERCENTAGE OF ACCIDENTS
140  REM  ACCORDING TO AGE GROUPS.  CHANGE PRINT STATEMENTS
150  REM  STARTING ON LINE 440 TO LPRINT TO OBTAIN A PRINTOUT
160  CLS
200  PRINT "THIS PROGRAM WILL FIGURE THE PERCENTAGE OF ACCIDENTS
     BY AGE"
210  PRINT "GROUPS AS FOLLOWS:  16-25 26-35 36-45 46-55 56-65
     AND OVER 65."
220  PRINT
230  PRINT "THE COMPUTER WILL PRINT DIFFERENT AGE GROUPS AND"
240  PRINT "YOU WILL TYPE IN THE NUMBER OF ACCIDENTS THAT GROUP
     HAD."
250  PRINT@465,"PRESS ANY KEY TO CONTINUE"
260  A$=INKEY$:IF A$="" THEN GOTO 260
270  CLS
280  INPUT "TOTAL ACCIDENTS FOR AGES 16-25 ARE ";G1
290  INPUT "TOTAL ACCIDENTS FOR AGES 26-35 ARE ";G2
300  INPUT "TOTAL ACCIDENTS FOR AGES 36-45 ARE ";G3
310  INPUT "TOTAL ACCIDENTS FOR AGES 46-55 ARE ";G4
320  INPUT "TOTAL ACCIDENTS FOR AGES 56-65 ARE ";G5
330  INPUT "TOTAL ACCIDENTS FOR AGES OVER 65 ARE ";G6
340  T=G1+G2+G3+G4+G5+G6
350  P1=G1/T:P1=P1*100
360  P2=G2/T:P2=P2*100
370  P3=G3/T:P3=P3*100
380  P4=G4/T:P4=P4*100
390  P5=G5/T:P5=P5*100
400  P6=G6/T:P6=P6*100
410  CLS
420  Z$="THE PERCENTAGE OF ACCIDENTS FOR AGES "
430  Q$="##.##"
440  PRINT TAB(40);"PERCENTAGE"
450  PRINT "AGE GROUP";TAB(15);"NUMBER OF ACCIDENTS";TAB(40);"OF
     TOTAL"
460  PRINT
470  PRINT "  16-25  ";TAB(15);"    ";G1;TAB(40);"  ";:PRINT
     USING Q$;P1
480  PRINT "  26-35  ";TAB(15);"    ";G2;TAB(40);"  ";:PRINT
     USING Q$;P2
490  PRINT "  36-45  ";TAB(15);"    ";G3;TAB(40);"  ";:PRINT
     USING Q$;P3
500  PRINT "  46-55  ";TAB(15);"    ";G4;TAB(40);"  ";:PRINT
     USING Q$;P4
510  PRINT "  56-65  ";TAB(15);"    ";G5;TAB(40);"  ";:PRINT
     USING Q$;P5
520  PRINT " OVER 65 ";TAB(15);"    ";G6;TAB(40);" ";:PRINT
     USING Q$;P6
530  PRINT TAB(20)"-----"
540  PRINT "TOTAL ACCIDENTS ARE ";TAB(20);T
```

PREPARATIONS FOR NEW BUSINESS STARTUP

CONTRIBUTOR:
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Objectives:

- The student will improve decision-making skills in Business Financing.

Procedures:

- Discuss the overall procedures with the students to give them a global understanding of the assignment: students are to select a business they would like to start; apply for a business loan to finance their business startup; and complete other assignments related to business startup.
- Review basic financing concepts with students. Provide students with several interest rates and mortgage terms.
- Have students develop a presentation to give in front of the class in which they describe the business they want to finance and the financing package they would like to get from the bank. OR The banker (the teacher) can interview the students using standard questions to determine the financing options.
- Review the basis upon which banks award loans. Have the students complete the awarding assignment. Give them a definite amount of available bank money so that they will be able to award four or five loans.
- Use the additional assignments to have students complete other future business startup-related activities.

Materials needed:

- Handouts: ASSIGNMENTS 1-8
- Financial Cookbook--Apple Computer
- Software: Print Shop, Newsroom, or Dazzle Draw

Comments:

- This activity is applicable in a variety of courses including accounting, general business, and personal finance.
- The teacher can alter the activities to fit available computer equipment and software.

Terminology:

- Balloon Payment--large payment at end of specific period of time as agreed upon in advance by both lender and borrower.

■ Assignment 1: FINANCING YOUR OWN BUSINESS

DIRECTIONS: PREPARE THIS ASSIGNMENT DURING YOUR LAB PERIOD. YOU SHOULD BE ABLE TO COMPLETE THIS IN THREE DAYS.

Dear Student:

Your loan for the establishment of your new business is being processed, and I would like to review the business with you upon completion of the loan papers. Before I do this, however, please re-evaluate the finance procedures that will apply to the loan. Using Financial Cookbook on the Apple Computer, complete the chapters on Mortgages, and determine which kind of loan is going to be most beneficial for you.

The bank has several loan types that you may be able to use to benefit the payment schedule that will serve your purpose. For example:

> If you wish to take a 15 year loan, we have a fixed rate of interest available at 13% for the life of the loan.
>
> If you wish to take a variable rate loan for the first 5 years at 8%, we will renegotiate during the 5th year for the next few years.
>
> You may wish to have a balloon payment on your loan after five years and have it calculated over a 20-year period so your payments will be low, as you are starting the business with an unsure monthly income.

Complete chapters 18, 19, 20, 21, 23 in the Financial Cookbook. Do not write in the book but make notes as they apply to your business. Be prepared to answer related questions concerning your business.

Plan on borrowing approximately $100,000. Calculate your monthly payment at a variety of interest rates, and determine what will fit your monthly budget. Select several rates and monthly payments for your budget; so when you talk to the banker the second time, you will be able to answer specific questions.

- Assignment 2: DETERMINING LOAN STATUS

Now that you have heard all the presentations for the new businesses in town, we must determine the loan status of the businesses. Write a paper on what loans should be awarded, and on what basis you made these decisions. Rank the businesses in the order that you would award the loan if you have a limited amount of money to give out. Use Writing Assistant and bold print the headings.

- Assignment 3: DEVELOP BUSINESS LOGO

Prepare a logo for your business, using Print Shop, Newsroom, or Dazzle Draw. You will use this graphic design on your letterhead. You will also need to develop a slogan for your business. Start designing your letterhead. Consider what information should be on a letterhead to be an effective piece to represent your business.

- Assignment 4: NEWSPAPER AD

Keep in mind that you will be hiring employees soon. Develop an ad for the newspaper to hire the people you need for your business.

- Assignment 5: EMPLOYMENT LETTERS

What letter will you use to bring people in for an interview, what questions will you ask when you interview, and what acceptance and rejection letters will you use. Write a notification of interview letter, an acceptance letter, and a rejection letter.

- Assignment 6: PLANT LAYOUT

Design a plant layout of your business showing how you will place your business inside the building, traffic patterns in and out of your major areas, location of your cash registers, your display counters, your inventory, etc. Use Dazzle Draw to do this job. You may also use the Mac and the Commercial Interiors and Home Interiors programs.

- Assignment 7: FOOD INDUSTRY ASSIGNMENT

Those of you in the food industry, develop a menu of your food items. The menu must go to the printer and be back by opening day of the business. Set your prices, design the pages, and come up with an attractive arrangement for your menus. Use Newsroom, Print Shop, or Dazzle Draw.

- Assignment 8: RETAILING ASSIGNMENT

Those of you who are selling items, prepare a price list of all your products. Develop an invoice that will have your logo/slogans, etc. We will use Filing Assistant to keep track of your inventory.

Keyboarding/ Typewriting

Category 5

THEME WRITING VIA APPLEWRITER

CONTRIBUTOR:
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Objectives:

- The student will be able to prepare theme, bibliography, end notes, and title page using Applewriter software.

Procedures:

- Give students the following handouts for inputting and printing a term paper:

TERM PAPER CHECKSHEET
BIBLIOGRAPHY CHECKSHEET and BIBLIOGRAPHY EXAMPLE
END NOTES CHECKSHEET and END NOTES EXAMPLE
COVER PAGE CHECKSHEET and COVER PAGE EXAMPLE

Materials needed:

- Handouts: listed above
- Applewriter Software
- Imagewriter printer or compatible

Comments:

- The direction to print (Part A-1, a and b) are for the Imagewriter printer. Teachers will need to check the compatibility of their printers for these specific commands.
- Teachers will find this concept useful but will need to modify this specific approach based on their equipment.

TERM PAPER CHECKSHEET

1. Clear computer memory: <N> (Erase Memory) Y/N? Yes

   (a) This part (a and b) may be omitted until you are ready to print.

   Take out disk and insert Imagewriter Tool Kit.

   Press CONTROL and OPEN APPLE and RESET to start program.

   Make sure that printer is on and connected to your computer.

   Depress 5 to Download Subscript/Superscript and RETURN. The bottom shows: Enter a numeric selection or use the arrow and depress RETURN key--may do either.

   The computer picks up the selection from the disk and again shows the numeric selections with 1 highlighted.

   Take out Tool Kit, and

   (b) Insert Applewriter IIe main program.

   Depress CONTROL and OPEN APPLE and RESET to start Applewriter IIe program. Depress RETURN to get Data Line screen.

2. This job requires some special controls that are stored on the Master diskette; therefore, load that file:

   (a) Keep in or insert and fire up the Master Applewriter disk.

   (b) When computer shows the Data Line screen, press CONTROL Q (to get Additional Functions Menu).

   (c) Type E (to load <G>LOSSARY FILE).

   (d) Monitor shows ENTER FILE NAME.

   (e) Type SUPERSCRIPT

   (f) Press RETURN.

   (g) Cursor goes back to Data Line screen. This file does not appear on the monitor; it has been loaded into the computer memory.

   (h) Now remove Master Applewriter diskette and insert your storage diskette.

3. If needed, press RETURN four times at the beginning. (This will lower the title on the first page to about line 10.)

4. Center the Report Title:
    - (a) Type center command (.cj).
    - (b) Type title in all capitals.
    - (c) Type left alignment command (.lj).
    - (d) Leave one blank line below the left alignment command and before the body of the report.

5. To put a page number on the upper righthand side of the second page and additional pages, you need to type somewhere after the first page begins, this print command:

    Now type: .TL***#* and RETURN.

    The page number symbol (#) will automatically print a number at the right edge of the paper at the Top Margin. You will need to change this Top Line command at the end of the report. (See Step 8.)

6. READ the reminders and Step 7 before you type this report:
    - (a) The body will "look" single spaced. The printer will double space for you.
    - (b) Do not press RETURN until the end of the paragraphs.
    - (c) Set tab five spaces in to indent paragraphs.
    - (d) Move cursor five spaces in and give tab command:
      <T>ab (Set/Clear/Purge): S (to set).

7. The following procedure will be used to type the End Notes for the report:
    - (a) Immediately after the period in the quotation, a superscript number must be typed.

      Press OPEN APPLE key and the number (1, 2, 3, etc.) of the quotation.

      Several symbols will appear on your screen. Do not leave any spaces before them but space appropriately after them. (Example: If the note ends the sentence, space twice after it, before beginning next sentence.)
    - (b) Continue typing your report and when the next end note appears, do Step 7a again.

8. Remember the paper advance note (.ff) at the end of the report and to change the Top Line (.TL) back to .TL 0 (with no symbols) at the end of the report.

9. SAVE your copy of the report:

   (a) Press CONTROL S

   (b) Type your name and REPORT, press RETURN (example: Berg.Report).

10. PRINT copy of job:

    (a) Press CONTROL P.

    (b) Press ?, then press RETURN.

    (c) We will change several commands:

    TOP MARGIN (TM). This command will put two blank lines between the page number and the body of the report.

    TOP LINE (TL). This command tells the printer to print a page number on the first Printed Line of the report. Delimiters (the stars ***) are used to place the number at the left, center, or right side of the top of the paper. (Example: .TL***#* RETURN will put the number at the right edge.)

    (d) Change:

    LEFT MARGIN (LM) = 15 (for 1 1/2 inch left)
    RIGHT MARGIN (RM) = 75 (for 1 inch right)
    TOP MARGIN (TM) = 2
    BOTTOM MARGIN (BM) = 6 (for 1 inch bottom)
    PRINTED LINES (PL) = 60 (number can vary)
    LINE INTERVAL (LI) = 1 (to double space report)
    PRINT DESTINATION (PD) = 0 (to check on screen)
    TOP LINE (TL) = (have already put command on first page of report)

    (e) Proofread carefully and then change Print Destination back to 1 (PD 1). Be sure to save report again if there are corrections made. May SAVE by depressing (S)ave and depressing equals key (=). Will save it under same title.

    (f) Type NP to start printer, press RETURN.

    (g) After printing, press RETURN (to return to job or Data Line).

BIBLIOGRAPHY CHECKSHEET

1. Clear computer memory: <N> (Erase Memory) Y/N? Yes
2. Center the title:
   (a) Type center command (.cj).
   (b) Type title in all capitals (BIBLIOGRAPHY).
   (c) Type left alignment command (.lj).
   (d) Return three times before giving print command.
3. Type print command on screen (.pm-5).

   This will indent the run-over lines (the second and third lines of the bibliography).
4. Type the bibliography references. Do not return the carrier until you are finished with the entire reference.

   Note: When underlining a publication, the punctuation must be inside the underscore symbol.
5. Leave one blank line between each reference.
6. At the end of the references, change the paragraph margin back (.pm+5).
7. Put the paper advance note (.ff) at the end of the report.
8. SAVE your copy:
   (a) Press CONTROL S
   (b) Type your name and BIBLIO, press RETURN.
9. PRINT copy of Bibliography:
   (a) Press CONTROL P.
   (b) Press ?, press RETURN.
   (c) You may wish to use the same commands as the Report (See Step 10), except:
   LINE INTERVAL (LI) = 0 (to single space)
   (d) Proofread carefully and then change Print Destination back to 1 (PD 1). Be sure to save report again if there are corrections. May SAVE by typing (S)ave and depressing equals key (=). Will save it under same title.
   (e) Type NP to start printer, press RETURN.

BIBLIOGRAPHY EXAMPLE

(By Laura Miller, Student)

Adams-Tucker, C., "Defense Mechanisms Used by Sexually Abused Children," Child Today, 14:8-12+, January/February, 1985.

Blanche, R. C., "The Nightmare of the Sexually Abused Child," USA Today, 114:54-7, November, 1985.

Huchton, Laura M., Protect Your Child: a Parent's Safeguard Against Child Abduction and Sexual Abuse, New York, Prentice-Hall, 1985.

Kilfoil, Fred, Child Abuse, Portland, Maine, J. Weston Walch, 1976.

Kosof, Anna, Incest: Families in Crises, New York, Watts, 1985.

Roberts, Albert R., Childhood Deprivation, Springfield, Illinois, Thomas, 1985.

Sheldon, S. L. and others, "Recognizing the Abused Child," Christ Century, 101:739-41, August 1-8, 1984.

Sloan, Irving J., Child Abuse: Governing Law and Legislation, New York, Oceana, 1983.

Sussman, Alan, Reporting Child Abuse and Neglect: Guidelines for Legislation, Cambridge, Massachusetts, Ballinger, 1975.

Townley, Roderick, Safe and Sound: a Parent's Guide to Protection, New York, Simon and Schuster, 1985.

Young, Leontine, Wednesday's Children, New York, McGraw-Hill Book Company, 1964.

END NOTES CHECKSHEET

1. Clear computer memory: <N> (Erase Memory) Y/N? Yes

   Load the Imagewriter Tool Kit and Glossary Superscript file if you have not done so. See instructions of Term Paper Number 1 and 2.

2. Center the title:

   (a) Type center command (.cj). END

   (b) Type title in all capitals (NOTES).

   (c) Type left alignment command (.lj).

   (d) Return three times after giving alignment command and before starting the references.

3. Indent references by using tab:

   (a) Set tab five in to indent.

   (b) Move cursor five spaces in and give tab command.

   (c) <T>ab (Set/Clear/Purge): S (to set).

4. Tab and type the first reference number:

   (a) Press OPEN APPLE key and the number (1, 2, 3, etc.).

   (b) Several symbols will appear on your screen. These are the commands to raise the number on the line.

5. Type the reference note after the number. Remember not to return the carrier until you have completed the entire note.

6. Double space between notes to leave one blank line between them.

7. Be sure number of End Note on this page agrees with the End Notes in report.

8. Remember the paper advance note (.ff) at the end of the page.

9. SAVE your copy of the report:

   (a) Press CONTROL S.

   (b) Type your name and END NOTES, press RETURN (example: Berg.End Notes).

10. PRINT copy of NOTES:

    (a) Press CONTROL P.

    (b) Press ?, Press RETURN.

    (c) You may use the same commands as the Report (see Step 10d of Report), except: LINE INTERVAL (LI) = 0 (to single space)

    (d) Proofread carefully and then change Print Destination back to 1 (PD 1). Be sure to save report again if there are corrections. May SAVE by typing: (S)ave and depressing equals key (=). Will Save it under same title.

    (e) Type NP to start printer, press RETURN.

END NOTES EXAMPLE

(By Ladd Richter, Student)

[1] Fred J. Cook, Mob, Inc., New York/London, Franklin Watts, 1977, pp. 12-15.

[2] Roy Rowan, "How the Mafia Loots JKF Airport," Fortune, June 22, 1987, p. 56.

[3] Fred J. Cook, Mob, Inc., New York/London, Franklin Watts, 1977, pp. 1-3.

[4] Fred J. Cook, Mob, Inc., New York/London, Franklin Watts, 1977, pp. 1-3.

[5] Fred J. Cook, Mob, Inc., New York/London, Franklin Watts, 1977, pp. 3-7.

[6] David Leon Chandler, Brothers in Blood, New York, EP Dutton and Co., Inc., 1975, p. 74.

[7] Fred J. Cook, Mob, Inc., New York/London, Franklin Watts, 1977, p. 16.

[8] Doug Feiden, The 10,000,000 Dollar Getaway, New York, Joe Publishers, Inc., 1980, p. 7.

[9] Doug Feiden, The 10,000,000 Dollar Getaway.

[10] David Leon Chandler, Brothers in Blood, New York, EP Dutton and Co., Inc., 1975, p. 35.

[11] Roy Rowan, "How the Mafia Loots JFK Airport," Fortune, June 22, 1987, p. 54.

[12] Roy Rowan, p. 54.

[13] Roy Rowan, p. 54.

[14] Roy Rowan, pp. 54-55.

[15] William Chaze, "How Teamsters High Command may be Unhorsed," U. S. News, June 22, 1987, p. 12.

[16] Time, "Busting the Godfathers," Reader's Digest, April 1987, pp. 93-94.

[17] William Chaze, "How Teamsters High Command may be Unhorsed," U. S. News, June 22, 1987, p. 12.

COVER PAGE

A cover page contains the title of the report, the name of the writer, the course title, the teacher's name for whom the report was prepared, and the date.

1. Center the report title and the writer's name in the upper half of the page.

2. Center the course title, the teacher's name, and the date in the lower half of the page.

3. Remember to type the center command (.cj).

4. Type the information in Steps 1 and 2 and leave about 14 returns before typing the lower half.

5. Remember the paper advance note (.ff) at the end of the page.

6. SAVE your copy of the cover page:

   (a) Press CONTROL S

   (b) Type your name and COVER PAGE, press RETURN (example: Berg.Cover Page).

7. PRINT copy of cover page:

   (a) Press CONTROL P.

   (b) Press ?, press RETURN.

   (c) You may use the same commands as the Report (see Step 10d of Report), except: TOP MARGIN (TM) = 12 (to move top line down page)

   (d) Proofread carefully and then change Print Destination back to 1 (PD 1). Be sure to save report again if there are corrections. May SAVE by typing (S)ave and depressing equals key (=). Will save it under same title.

   (e) Type NP to start printer, press RETURN.

Each instructor may have their own instructions for this page. Follow their instructions. If none are given, these can be used.

COVER PAGE EXAMPLE

(TITLE OF TERM PAPER)

By (Name of Preparer)

(CLASS)

(Name of Instructor)

(Date Prepared)

KEYBOARD TRANSPARENCY FOR TEACHING BEGINNING TYPEWRITING/KEYBOARDING

CONTRIBUTOR:
Betty L. Boyce
California State Polytechnic University
Pomona, CA 91768-4038

Objectives:

- The beginning/keyboarding student will be assisted in learning the keyboard by the use of an overhead transparency.

Procedures:

- Make a transparency of a generic computer keyboard (next page).
- Use the transparency on an overhead projector to demonstrate finger reaches, returning to home row, reaching for the return and shift keys, etc.

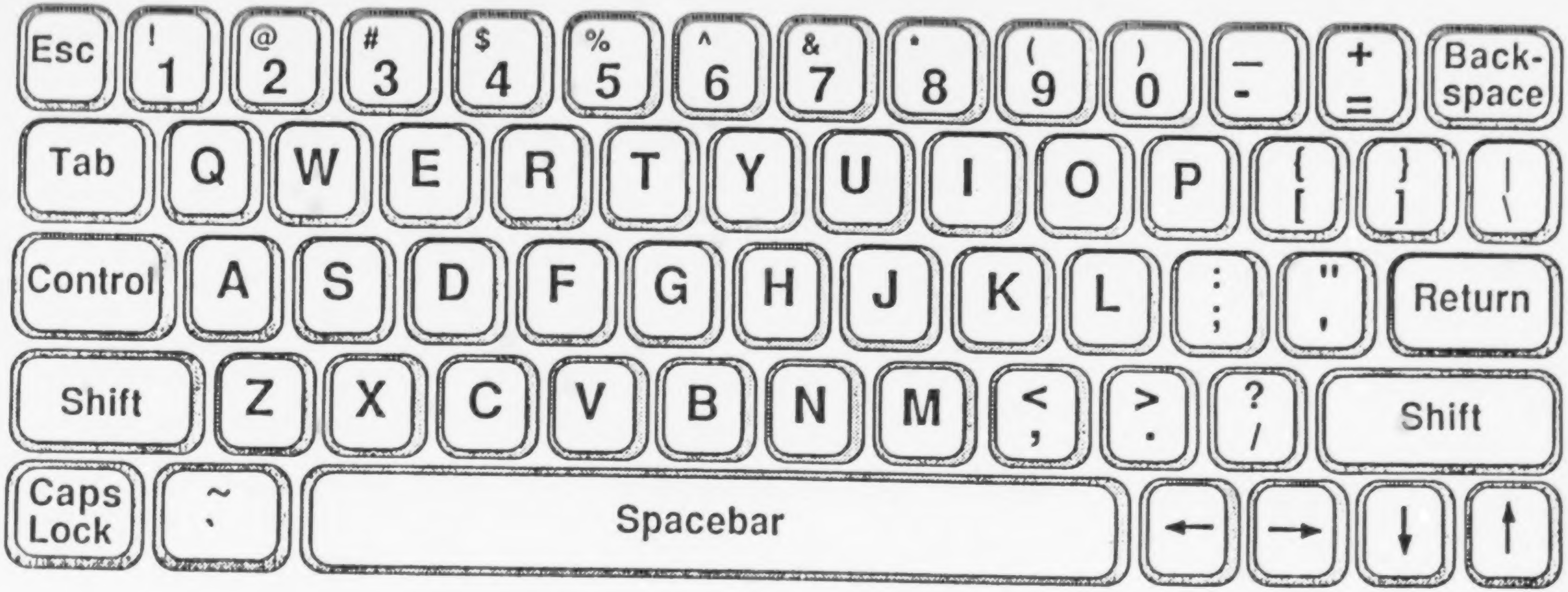
Materials needed:

- Materials for making transparencies
- Overhead projector
- Photocopy of the generic computer keyboard

Comments:

- Reprinted with permission of the Business Education Center, Cal Poly, Pomona, California from the "Facilitator Handbook for Keyboarding" c 1988.

- Art by Mary Auvil, Consultant, Soquel, California.


Esc
! 1
@ 2
# 3
$ 4
% 5
^ 6
& 7
* 8
(9
) 0
_ -
+ =
Back-space
Tab
Q
W
E
R
T
Y
U
I
O
P
{ [
}]
| \
Control
A
S
D
F
G
H
J
K
L
: ;
" '
Return
Shift
Z
X
C
V
B
N
M
< ,
> .
? /
Shift
Caps Lock
~ `
Spacebar
←
→
↓
↑

TEACHING AID FOR BEGINNING KEYBOARDING/TYPEWRITING

CONTRIBUTOR:
Betty L. Boyce
California State Polytechnic University
Pomona, CA 91768-4038

Objectives:

- The beginning keyboarding/typewriting student will be assisted in learning the keyboard using cards.

Procedures:

- On card stock, reproduce the generic keyboards (next page).
- Cut in half.
- Fold for a name card.
- Have students write their names on the side opposite the computer keyboard.
- Place on monitor so that the student can see the keyboard and the teacher can see the student's name.
- Teacher may wish to have students color the keys. Use a different color for keys reached by each finger.
- Students should be directed to check the keyboard chart rather than looking at the actual keyboard when they don't recall the location of a key.

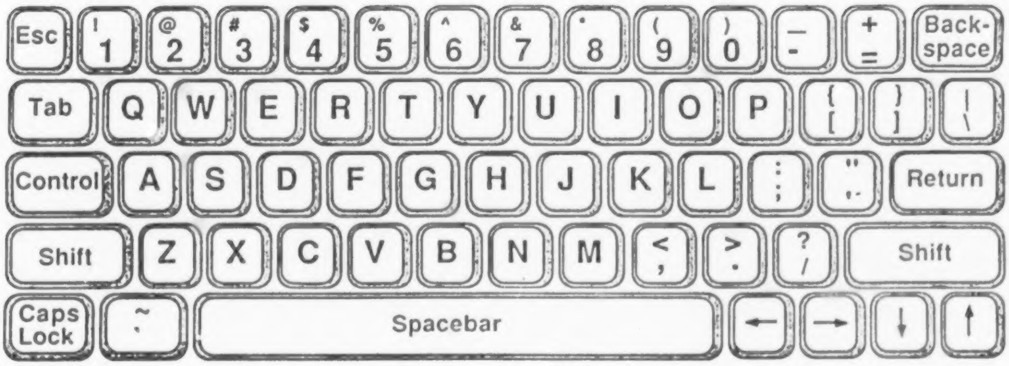
Materials needed:

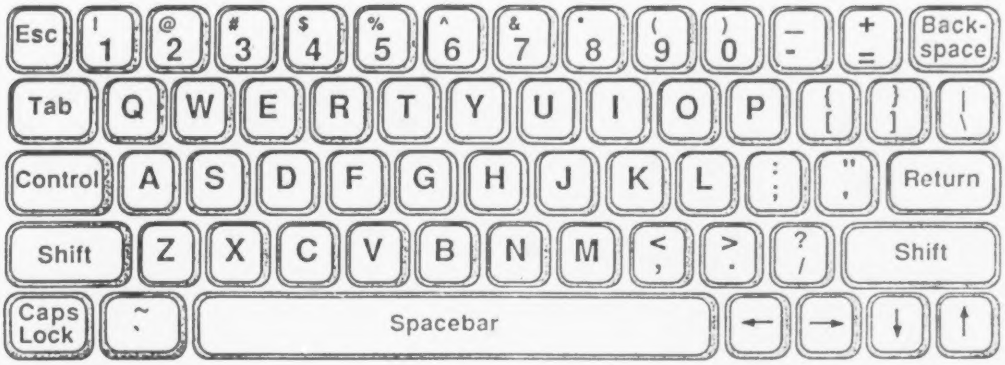
- Card stock
- Photocopy of generic keyboards (next page)
- Colored pens (optional)

Comments:

- Reprinted with permission of the Business Education Center, Cal Poly, Pomona, California from the "Facilitator Handbook for Keyboarding" c 1988.

- Art by Mary Auvil, Consultant, Soquel, California.


Esc ! 1 @ 2 # 3 $ 4 % 5 ^ 6 & 7 * 8 (9) 0 _ - + = Back-space
Tab Q W E R T Y U I O P { [}] | \
Control A S D F G H J K L : ; " ' Return
Shift Z X C V B N M < , > . ? / Shift
Caps Lock ~ ` Spacebar ← → ↓ ↑


Esc ! 1 @ 2 # 3 $ 4 % 5 ^ 6 & 7 * 8 (9) 0 _ - + = Back-space
Tab Q W E R T Y U I O P { [}] | \
Control A S D F G H J K L : ; " ' Return
Shift Z X C V B N M < , > . ? / Shift
Caps Lock ~ ` Spacebar ← → ↓ ↑

CREATIVE TIPS FOR KEYBOARDING

CONTRIBUTOR:
Ann Denton
Becky Regli
Woodland High School
Woodland, CA 95695

Objectives:

- The student will be given creative exercises to increase his/her motivation and skill development.

Procedures:

- The following four techniques help keep students' interest high and provide meaningful practice:

- Daily Warm-up

Sentence Starters
Example: "If I were ten years older..."
"I can't understand why..."
"I remember when..."
Commonly misspelled words--type 3 lines

- Speed Drills

a. See if you can type a given line in 1 minute, then stop. (No problem--most students do.)
b. See if you can type the same line in 50 seconds, then stop. (Most finish.)
c. See if you can type same line in 40 seconds. Continue down to about 20 seconds.
As the students become faster, increase the length of the line.
Students love this drill. (Reward students who can finish the line in 20 seconds.)
d. On practice lines, use a limited amount of time. For example, give a timing of one minute on each of several lines.
e. Reward students on a regular basis.
We use stars and stick them on their computer disk covers.
Relate stars to the Olympics and use Gold, Silver, Bronze--works great.

f. Once in a while, bring in other prizes.
Examples: Customer Discount Cards from local merchants
Doughnuts
Candy

- Technique Building

a. Team approach
Divide class into teams (3 to 5 teams per class).
Keep track of poor technique for period of one or two weeks. Have a student monitor from each team watch another team.
The monitor raises his/her hand when he/she sees poor technique (don't stop class).
The team with the least check marks wins.
You can do just one technique at a time and just tell monitors what they are to watch for, or can combine more than one technique.

b. Teacher Observation
If a student is using poor technique, the teacher stops the entire class during a timed writing (for technique). (Do this frequently in the very beginning of the semester.) This method disturbs students because they don't like having to stop right in the middle of a timed writing, but it shapes them up quickly!

- Accuracy Building

a. Perfect paragraphs
Student receives a star for each perfect paragraph.

b. Cortez Peters Diagnostic Testing
Students do corrective practice according to directions in Cortez Peters Championship Typing Drills book (Gregg/McGraw-Hill Publishing Company).

GRADE FOUR KEYBOARDING--LESSON ONE

CONTRIBUTOR:
Linda Osborne
Live Oak Elementary
San Antonio, TX 78148

Objectives:

- The student will be able to identify and type the letters and numbers on a keyboard.

Procedures:

Several learning components are presented as introductory activities in elementary keyboarding:

- CONTENT:
    1. Review the correct posture and hand position for keyboarding.
    2. Point out the location of the alphabet (in order) on a wall keyboarding chart.
    3. As you call out the letters of the alphabet, have students point to the designated letter and determine its location--left or right side of the keyboard.
    4. Explain and demonstrate on wall chart that keys on the right should be depressed with the right hand and the keys on the left side with the left hand.
    5. Follow the same procedure with the number keys.
    6. Review the location and use of the space bar.
- GUIDED PRACTICE:
    1. Have students type the ABC's in order, inserting a space between each letter.
    2. Have students type the numbers, 1-10, inserting a space between each number.
- INDEPENDENT PRACTICE:
    1. Give students a list of words to type on the keyboard (i.e., spelling, TEAMS vocabulary, etc.).
    2. Have students label a blank paper keyboard with the alphabet and the appropriate numbers as designated on a wall keyboarding chart. (see KEYBOARDING handout).
- EXTENDED ACTIVITIES:
    1. Demonstrate using designated key to put the keyboard in typewriter mode.
    2. Have students type their first and last name using upper and lower case letters.
    3. Have students type the alphabet using upper and lower case letters, inserting a space between each pair.

- EVALUATION:
  Teacher Observation-checklist
  Teacher evaluation of worksheet

Materials needed:

- Handout: KEYBOARDING
- Computer systems, wall keyboard chart, individual paper, keyboard, keyboard worksheet, sentence strips--can use any word processing program.

Comments:

- PREREQUISITE SKILLS:
  Reading: (1) listening skills
  (2) following directions
  (3) letter discrimination

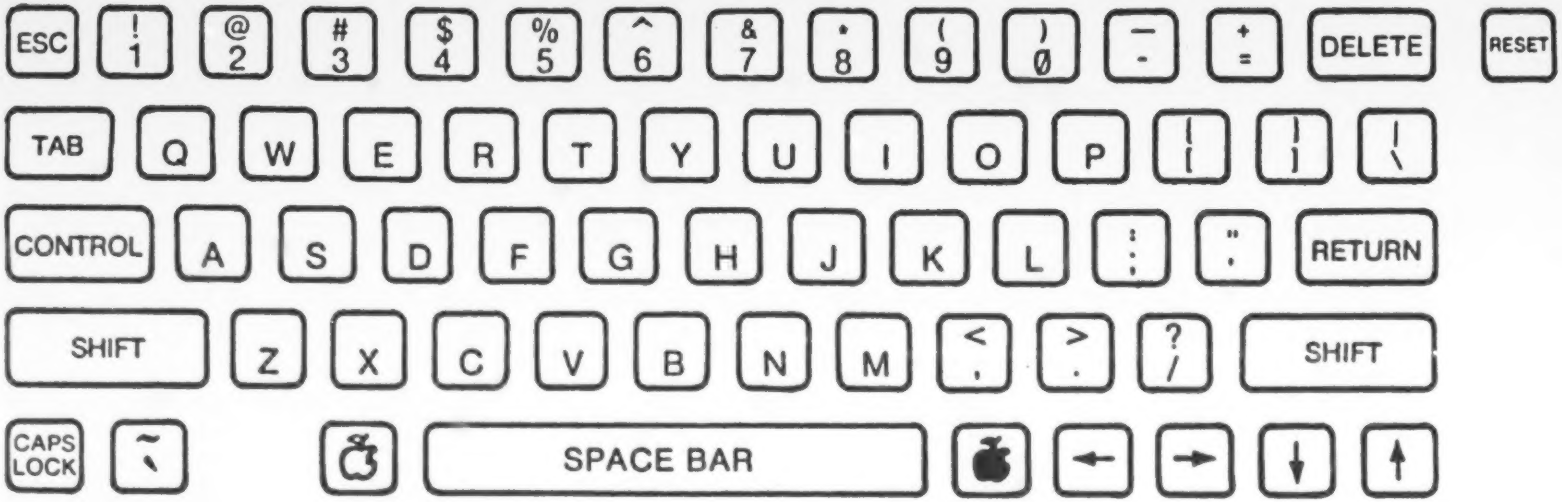
  Language: (1) oral communication

  Computer Instruction:
  (1) hardware/software
  (2) basic computer usages
  (3) rules of care
  (4) special keys

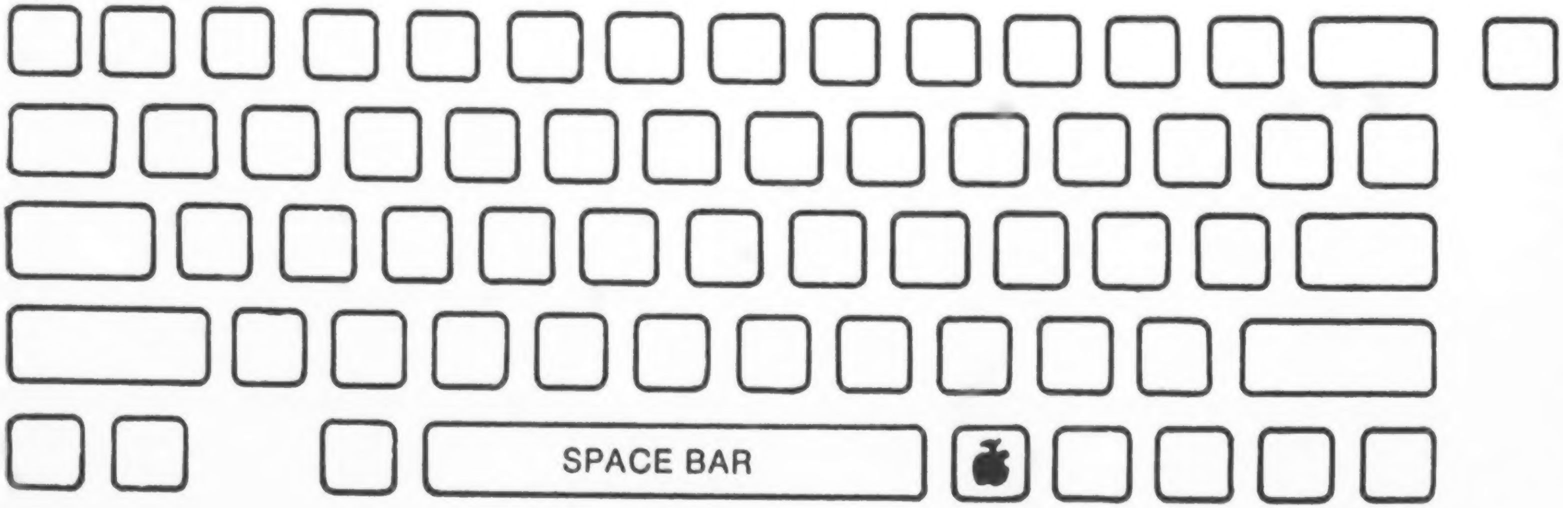
- SKILLS ADDRESSED:
  Reading: (1) listening skills
  (2) discrimination of letters and numbers
  (3) following directions
  Science/Math:
  (1) problem solving
  (2) one to one correspondent
  (3) comparisons

  Computer Instruction:
  (1) keyboarding skills

KEYBOARDING


ESC
! 1
@ 2
# 3
$ 4
% 5
^ 6
& 7
* 8
(9
) 0
— -
+ =
DELETE
RESET
TAB
Q
W
E
R
T
Y
U
I
O
P
{ [
}]
| \
CONTROL
A
S
D
F
G
H
J
K
L
: ;
" '
RETURN
SHIFT
Z
X
C
V
B
N
M
< ,
> .
? /
SHIFT
CAPS LOCK
~ `
SPACE BAR

Fill in the blank keys.



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HALLOWEEN TYPING FUN

CONTRIBUTOR:
Vicki Robertson
Upland High School
Upland, CA 91786

Objectives:

- The student will use creative sentences to increase motivation, speed, and accuracy.

Procedures:

- Group the class into teams of approximately five students. (Students may want to name their team.) Distribute the handouts: CRAZY SENTENCES and TRICK OR TREAT RELAY.

- Activity 1: Crazy Sentences

  1. Appoint a student in each group to tally the scores. This person will add all team members' WPM together, then add all team members' errors together (to come up with a total, e.g., 259/12).

  2. Give a one-minute timing on each Crazy Sentence. After each timing, have the team tallyperson report the total to the teacher.

  3. While the class is taking the timing, write the qualifications for the winner on the board, and cover it with a piece of paper or a large paper pumpkin. Qualifications may be: Most WPM, Least WPM, Most Errors, Least Errors, Best Overall, etc.

  4. After team scores have been reported to the teacher, uncover the mystery winner's qualifications.

- Activity 2: Trick or Treat Relays

  1. Hand out one piece of goldenrod paper to each team.
  2. Each team member must type one sentence of the relay, then remove it quietly and pass it on to the next person to type the next sentence. When the team has finished all five sentences, they must hold up the paper and shout "Trick or Treat!" (Computer students may switch seats at one computer instead of relaying paper.)
  3. The winners may be: Fastest Team, Team with the Most Perfect Lines, and Least Errors, etc.

- Be creative and have fun!

CRAZY SENTENCES

1. They are to do the trick or treating when it gets dark.
2. He is to work with us if the pumpkin is ready.
3. He or she is to go to the haunted house later today.
4. The ghosts may be paid extra for spooking people.
5. The witch is to go with the black cat and the skeleton.
6. The goblins will go to the city park to sign the forms.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |

TRICK OR TREAT RELAY

RELAY 1

1. The witch with the big green mole on her nose ate the black cat.
2. The creature crept up the squeaky stairs late at night.
3. The slimy ghost walked down the dark street frightening the people.
4. The spooky alley freaked out the Halloween visitors.
5. The scary black cat jumped through the window on Halloween night.

RELAY 2

1. The wicked witch flew over the pumpkin patch late at night.
2. On Halloween, he likes to smash pumpkins and walk through graveyards naked.
3. The ugly witch with the wart flew around the haunted house spooking kids.
4. I saw a strange ghost walking around your house late last night.
5. The witch was riding on her broom and screaming at the little children.

RELAY 3

1. Halloween is a time for kids to dress up as witches and vampires.
2. As soon as the man walked in the door, a head rolled by his foot.
3. The Wicked Witch and Frankenstein had human blood and pizza for dinner.
4. Halloween is the time that witches and goblins love to party the most.
5. A strange ghost was seen driving your new red car last night.

SPECIAL DRILLS FOR TEACHING 1, 0 IN KEYBOARDING

CONTRIBUTOR:
Marilyn Wilkins
Eastern Illinois University
Charleston, IL 61920

Objectives:

- The student will be able to key accurately the 1 and 0 on a computer keyboard or electric typewriter with touch method and be able to explain why these keys must be used on the computer.

Procedures:

- Using a keyboarding/typewriting text, present keys, describe proper reach, and have students practice reaches. Call out the drills, then let students practice at their own rate.
- Give students photocopies of DRILL FOR 0 AND 1 and direct students on how to complete the drill (number of times to type lines, etc.)
- Be sure students use the number keys 1 and 0 in these drills except for words in lines 6 and 7 where the letters L and O are appropriate. Discuss with the students that microcomputers do not recognize lower case L and uppercase O for 1 and 0. Use this drill to introduce and/or provide additional practice in the use of 1 and 0.

Materials needed:

- Handout: DRILL FOR 0 AND 1
- Can be used with any appropriate computer software

Drill for 0 and 1

a1 a1 a1 aq1 aq1 aq1 az1 az1 az1 z1 z1 z1 q1 q1 q1 111 111 111

;0 ;0 ;0 ;p0 ;p0 ;p0 ;/0 ;/0 ;/0 /0 /0 /0 p0 p0 p0

10 10 10 100 100 100 1,000 1,000 1,000 10.10 10.10 10.10

1.1. 1.1 1.1 1.0 1.0 1.0 0.1 0.1 0.1 ENG 101 ENG 101 ENG 101

1986 1986 1987 1987 1988 1988 1989 1989 1990 1990 2001 2001

Did you see the movie "2001: A Space Odyssey?" I saw it on 1/10/70.

My grandmother was born about 100 years ago in the late 1800's. She is nearly 100 years old.

Office Procedures/ Office Management/ Records Management

Category 6

STATES CROSSWORD PUZZLE

CONTRIBUTOR:
Betty L. Boyce
California State Polytechnic University
Pomona, CA 91768-4038

Objectives:

- The student will review the correct two-letter abbreviation for the 50 states by completing the crossword puzzle, STATES.

Procedures:

- Reproduce this puzzle for your students.
- Provide a resource that lists the two-letter state abbreviations for your students to use as they complete the puzzle.
- For some of the questions, the two-letter abbreviation is given and students write in the full name of the state.
- For other questions, the full name of the state is given and students write in the two-letter abbreviation.
- Accept only those answers that are completely correct.
- For answers requiring the complete state name, the state name should be spelled correctly.
- For answers requiring the two-letter abbreviation, the abbreviation should be correct and in caps.

Materials needed:

- Handout: STATES crossword puzzle

Comments:

- Using an incorrect form of the two-letter state abbreviations has become an epidemic! The correct two-letter state abbreviation is simple--just two letters in caps with no punctuation. "CA" is the correct two-letter state abbreviation for California. "Ca." is the usual incorrect form of the two-letter state abbreviation for California.
- All students should learn the correct form for two-letter state abbreviations. Students grow to become sign painters, office employees, and print shop workers. Sign painters paint addresses on sides of buildings and business vehicles. Office employees type correspondence. Print shop workers take orders for business cards. All should know the correct form for two-letter state abbreviations.

Credit line:

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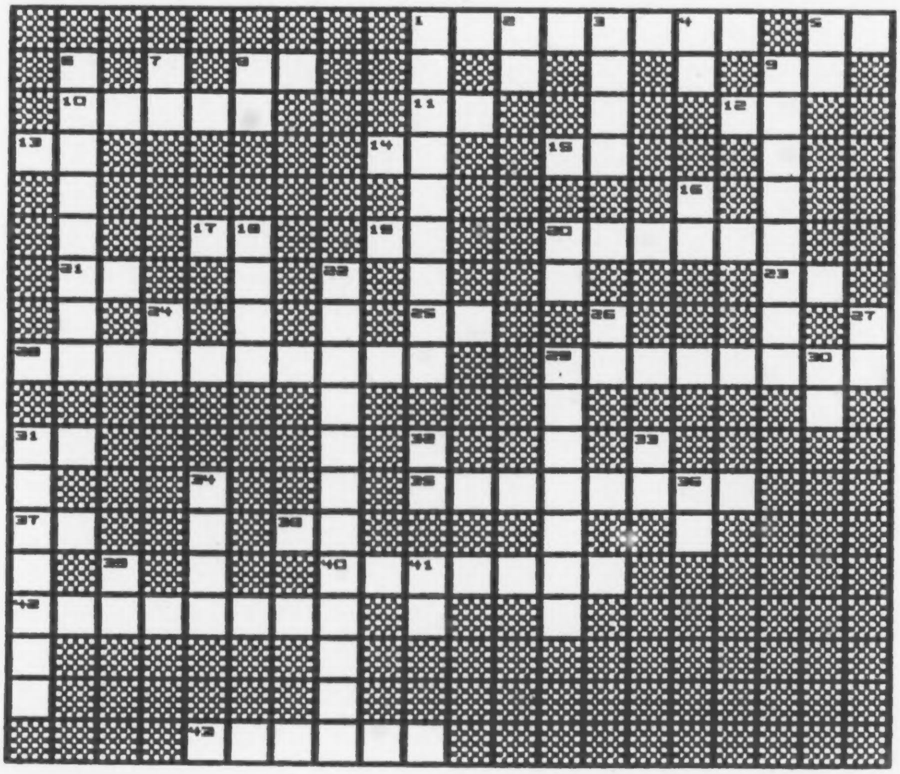
Answer:

```
         MICHIGAN WV
 V W ME  I T O R NY
 IDAHO   NH  W  DE
OR      TN  LA   B
 G       E     M R
 I  CO  MS  NEVADA
 ND  H P O  M    SC
 I W I E TX  G   K S
CALIFORNIA  MARYLAND
       N    O     J
AL     S A  N N
R   U  Y KENTUCKY
IN  T FL   A  S
Z I A  VERMONT
OKLAHOMA I  A
N      N
A      I
    HAWAII
```

Word list:

AK
AL
AR
ARIZONA
CALIFORNIA
CO
CT
DE
FL
GA
HAWAII
IDAHO
IL
IM
IOWA
KENTUCKY
KS
LA
MARYLAND
MA
ME
MICHIGAN
MINNESOTA
MO
MONTANA
MS
NC
MD
NEVADA
NEBRASKA
NH
NJ
NM
NY
OHIO
OKLAHOMA
OR
PENNSYLVANIA
RI
SC
SD
TN
TX
UTAH
VERMONT
VIRGINIA
WA
WI
WV
WY

STATES



ACROSS

1. State abbreviated "MI"
5. 2-letter abbreviation for West Virginia
8. 2-letter abbreviation for Maine
9. 2-letter abbreviation for New York
10. State abbreviated "ID"
11. 2-letter abbreviation for New Hampshire
12. 2-letter abbreviation for Delaware
13. 2-letter abbreviation for Oregon
14. 2-letter abbreviation for Tennessee
15. 2-letter abbreviation for Louisiana
17. 2-letter abbreviation for Colorado
19. 2-letter abbreviation for Mississippi
20. State abbreviated "NV"
21. 2-letter abbreviation for North Dakota
23. 2-letter abbreviation for South Carolina
25. 2-letter abbreviation for Texas
28. State abbreviated "CA"
29. State abbreviated "MD"
31. 2-letter abbreviation for Alabama
35. State abbreviated "KY"
37. 2-letter abbreviation for Indiana
38. 2-letter abbreviation for Florida
40. State abbreviated "VT"
42. State abbreviated "OK"
43. State abbreviated "HI"

DOWN

1. State abbreviated "MN"
2. 2-letter abbreviation for Connecticut
3. State abbreviated "IA"
4. 2-letter abbreviation for Arkansas
5. 2-letter abbreviation for Wyoming
6. State abbreviated "VA"
7. 2-letter abbreviation for Washington
8. 2-letter abbreviation for Missouri
9. State abbreviated "NE"
16. 2-letter abbreviation for Massachusetts
18. State abbreviated "OH"
20. 2-letter abbreviation for New Mexico
22. State abbreviated "PA"
24. 2-letter abbreviation for Wisconsin
26. 2-letter abbreviation for Georgia
27. 2-letter abbreviation for South Dakota
29. State abbreviated "MT"
30. 2-letter abbreviation for New Jersey
31. State abbreviated "AZ"
32. 2-letter abbreviation for Alaska
33. 2-letter abbreviation for North Carolina
34. State abbreviated "UT"
36. 2-letter abbreviation for Kansas
39. 2-letter abbreviation for Illinois
41. 2-letter abbreviation for Rhode Island

EVALUATING SOFTWARE FOR THE BUSINESS OFFICE

CONTRIBUTOR:
Judy Joyce
Red Creek High School
Red Creek, NY 13074

Objectives:

- The student will analyze three different word processing packages/programs to determine the strengths and limitations of each package/program and its potential use in a business office.

Procedures:

- Students should have studied and used the various word processing packages/programs that will be evaluated.
- Students should complete the evaluation form and prepare responses to questions.

Materials needed:

- Handout: COMPARISON OF WORD PROCESSING SOFTWARE
- Three different word processing packages/programs

Comments:

- This idea could be applied to various word processing packages/programs and used in advanced word processing classes. The idea could also be used for other computer software applications (such as data base and spreadsheet).
- This idea could serve as the basis for business software evaluation in the office procedures class.
- In this exercise students learn that certain functions are common to all word processing packages and that other functions are optional. They also learn that the more expensive a commercial package, the more options are generally available.

COMPARISON OF WORD PROCESSING SOFTWARE

1. Compare the following three word processing software packages by placing a checkmark in the appropriate box if you can do the function.

FUNCTION	DisplayWrite II	PFS-Write	Learnware
Menu driven			
Status line			
On-screen help			
Scrolling			
Manipulate blocks of material			
Center			
Underline			
Sub/superscript			
Search/replace			
Spelling			
Indent			
Different types of tabs			
Single/double spacing			
Triple or 1/2 spacing			
Pica, elite, prop. printing			
Auto. page numbers			
Move cursor by: word, sentence, line, page			
Spelling check			
Housekeeping chores			
Merge documents			
Column manipulation			
Easy printing & Chg.			

2. Use the software package you feel most comfortable with to answer the following questions in COMPLETE SENTENCES. Print a copy of your answers.

   1. Which software package do you prefer? Why?
   2. Which software package was the easiest to use?
   3. Which software package would be most useful in a business situation? Why?
   4. Name one thing you liked and disliked about each package.

CAREER PROJECT

CONTRIBUTOR:
Carol Perlinski
Bozeman High School
Bozeman, MT 59715

Objectives:

- The student will use library resources to research a chosen career.
- The student will write the report to reflect correct English usage.
- The student will prepare the report using word processing equipment.

Procedures:

- Provide students with the handouts: CAREER PROJECT REQUIREMENTS, CAREER INTERVIEW GUIDE, and CAREER PROJECT GRADING CRITERIA. Discuss the research topic. Review research procedures and grading criteria.
- Instruct students to choose a business-related career. Students receive instruction in the school library and have two days to research and write the report. The report is due on the third day.
- Arrange library time for the students to conduct research.
- Arrange to have students use word processing equipment to prepare the report. If the career project is completed in a class where the students have word processing capabilities, the students are required to compile the report on the word processor. This will involve one more day to complete the report.

Materials needed:

- Handouts: CAREER PROJECT REQUIREMENTS, CAREER PROJECT GRADING CRITERIA, and CAREER INTERVIEW GUIDE
- Word processing software and compatible hardware

Comments:

- This project is most appropriate for a number of business classes. The suggested handouts are good and may be adapted to meet the needs of students.

NAME ____________________________

CAREER PROJECT REQUIREMENTS

Your Project will be completed as follows:

1. Cover page: TITLE OF THE CAREER AREA

   Name of Class
   Date Due
   Your Name

2. Guidelines for correct English usage must be followed--including grammar, punctuation, spelling, number usage, and capitalization.

3. Illustrated with pictures.

4. Bibliography page listing in proper order all reference sources used.

5. Optional: Place all materials in a folder.

Use the following sources:

1. Two library reference books (preferably more).

2. Optional (worth 5 points): Interview (use CAREER INTERVIEW GUIDE).

Your Career Project will include:

1. Introduction
2. Description of the career
3. Listing of education qualifications
4. Entry-level salary
5. Job outlook
6. Advantages and disadvantages of the career
7. Why you chose the career
8. Summary

Bring magazines to class to cut illustrations for the project.

NAME ________________________

CAREER INTERVIEW GUIDE

In an interview, you will get information about work, the worker, the work setting, and the general effect of the work on the individual. Find out about "likes and dislikes." Use this guide, but be informal. When you begin the interview, tell the person why you want the interview. Encourage the person to talk freely about his or her job--and listen carefully.

The following questions might help you; you might not want to use them all with every person.

1. What is the official title of your job?
2. How long have you been on this job?
3. How did you first get involved in this kind of work?
4. What are some of the major tasks that you do in your work?
5. What other jobs have you had? How are they related, if at all, to the job you now have?
6. What training or education is required for this job?
7. What do you like most about your job? What do you like least?
8. How does your job affect what you do or don't do in your home and social life?
9. If you could do it all over again, would you still select this kind of work: Why or why not?
10. What gives you the most satisfaction in the work you are now doing?
11. What future work or career goals do you have? What job or work do you hope to be involved with ten years from now?
12. What do you think are some important things that a person who is considering going into this kind of work should know about it?
13. What other comments would you like to make?

NAME ______________________

CAREER PROJECT GRADING CRITERIA

Points Earned	Poss. Points	Item Graded:	Comments
_____	5	Cover Page	
_____	5	Introduction	
_____	10	Career Description	
_____	10	Education Qualifications	
_____	10	Entry-Level Salary	
_____	10	Job Outlook	
_____	10	Adv. & Disadv. of Career	
_____	5	Why You Chose the Career	
_____	5	Summary	
_____	5	Illustrations	
_____	5	Interview	
_____	5	Bibliography	
_____	5	2 Library Sources	
_____	5	Neatness	
_____	5	Produced on a Word Processor	
_____	100	Total Points	

General Business/ Basic Business/ Introduction to Business

Category 7

INCREASING INTEREST IN AMERICAN BUSINESS SYSTEM THROUGH USE OF CROSSWORD PUZZLES

CONTRIBUTOR:
Irma Nielsen
Kinder High School
Kinder, LA 70648

Objectives:

- The student will review labor relations and labor economics terminology through crossword puzzles on microcomputers.

Materials needed:

- Handout: LABOR UNIONS CROSSWORD PUZZLE
- To generate similar puzzles, use CROSSWORD MAGIC, by L & S Computerware, 1008 Stewart Drive, Sunnyvale, CA 94986

Comments:

- Teachers can use this idea with any lesson plan. Puzzles are made from a vocabulary list. Teachers key in the vocabulary terms and the software program prepares the puzzle. The teacher next keys in all the clues (definitions) for the words. The puzzle is printed with the clues at the bottom of the page. The key to the puzzle is printed on a separate page.

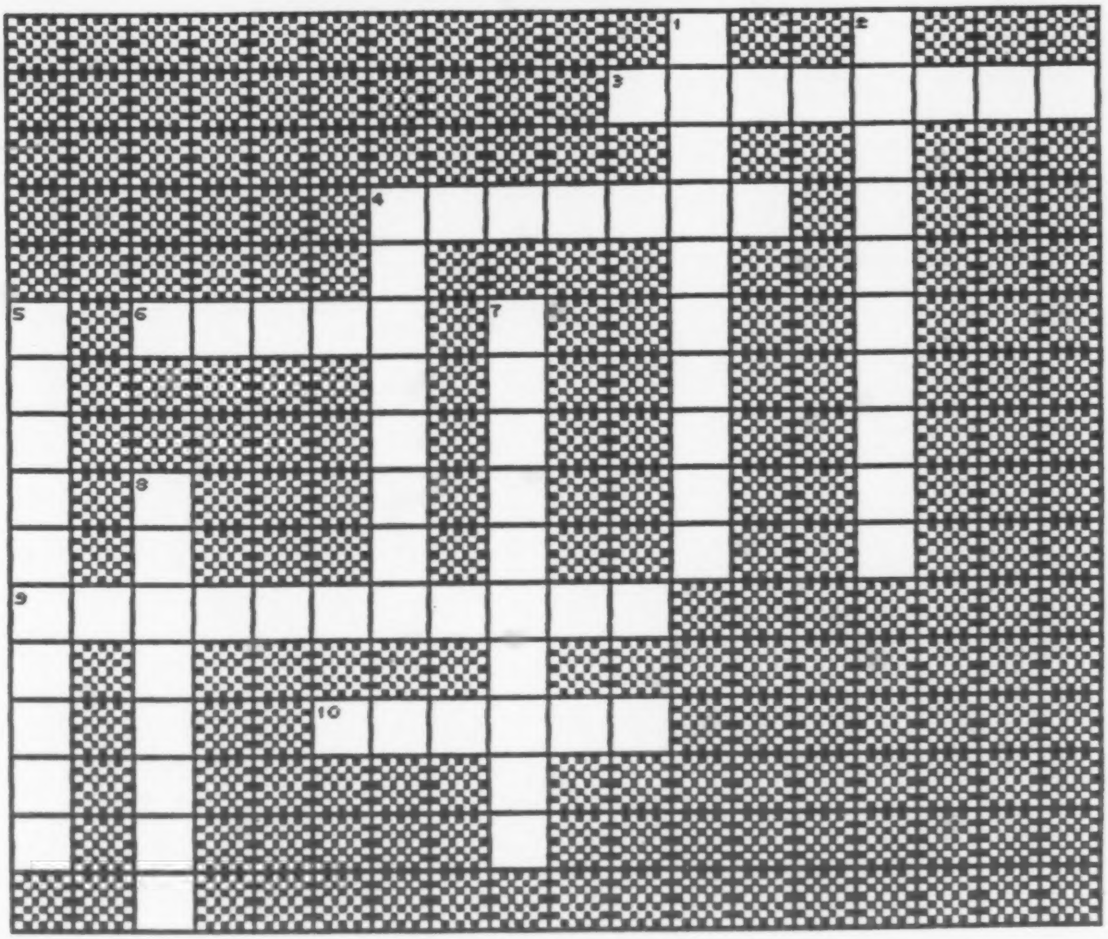
Answer:

```
           J  A
          CONGRESS
           U  B
      MASTERS I
      E    N  T
F LABOR C  E  R
E     C O  Y  A
D     H L  M  T
E E   A L  A  O
R M   N E  N  R
APPRENTICES
T I     T
I O  STRIKE
O Y     V
N E     E
  R
```

Word List:

Apprentices
Arbitrator
Collective
Congress
Employer
Federation
Journeyman
Labor
Masters
Merchant
Strike

LABOR UNIONS CROSSWORD PUZZLE



ACROSS:

3. The meaning of CIO. ..... of Industrial Organization
4. Older craftsmen in whose homes the work was performed
6. All forms of human effort, physical and mental, that provide value to finished products or services
9. Young beginners in the craft, who work for their room and board, while learning about their trade
10. Work stoppage called by workers

DOWN:

1. Craftsmen employed by masters on a day-wage basis
2. A third person who is agreed upon by both sides to settle labor disputes
4. Guilds which include shopkeepers and retailers
5. American .... of Labor
7. Bargaining between employers and representatives of organized groups or workers for better wages
8. The boss or manager of a business

Shorthand/ Machine Transcription

Category 8

DICTATION/TRANSCRIPTION ACTIVITIES

CONTRIBUTOR:
Gregg Condon
Altoona, WI 54720

Objectives:

- The student will practice using his/her shorthand transcription skills with his/her word processing skills in a realistic office task.

Procedures:

- Dictate standard letters and paragraphs over a span of days or even weeks which the students write in shorthand. Some of the letters and paragraphs should contain variable-data blanks. As part of the dictation, each standard item should be given a file number.
- Have the students transcribe their shorthand notes at a personal computer using a word processing program.
- Dictate specific addresses, data insertions, and paragraph numbers on subsequent days to be combined into letters. Also, on occasion, dictate the content of unique paragraphs to be merged with standard ones later.
- Have the students print out their mailable letters.according to the instructions which have been dictated to them.

Materials needed:

- Word processing software

Comments:

- This could be a once-a-week activity for the entire semester during which time the data base of standard letters, paragraphs, and addresses would accumulate. As the data base grows and as the students' skills increase, the mailable-letter problems would increase in complexity and number.

Business Law

Category 9

USING A WORD PROCESSOR TO DEMONSTRATE ON-LINE COMPUTER SEARCHES FOR LEGAL RESEARCH

CONTRIBUTOR:
Ivan Wallace
East Carolina University
Greenville, NC 27858-4353

Objectives:

- The student will understand how electronic legal database searches are made through a simulation done on a word processor or data base program.

Procedures:

- Using any word processing software package, create a document and type any text in it from selected legal cases.

- Key approximately three paragraphs into the document to represent three different law cases.

- Next, using the "search" or "hunt" feature, have the word processor search for different strings of text.

- Explain to the class that the same concept is used for law research in that attorneys subscribe to databases and electronically search for key words to do legal research.

Materials needed:

- Handout: SAMPLE ON-LINE COMPUTER SEARCHES FOR LEGAL RESEARCH

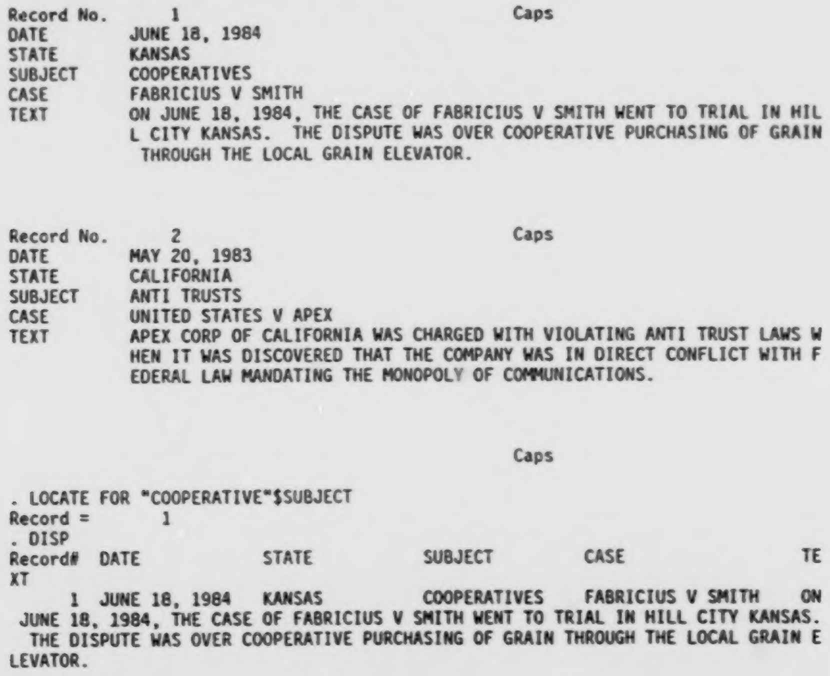
- Any computer and word processing software

Comments:

- A data base program can also be used to demonstrate this concept.

SAMPLE ON-LINE COMPUTER SEARCHES FOR LEGAL RESEARCH

(NOTE: Sample uses dBase III)



```
Record No.      1                              Caps
DATE         JUNE 18, 1984
STATE        KANSAS
SUBJECT      COOPERATIVES
CASE         FABRICIUS V SMITH
TEXT         ON JUNE 18, 1984, THE CASE OF FABRICIUS V SMITH WENT TO TRIAL IN HIL
             L CITY KANSAS.  THE DISPUTE WAS OVER COOPERATIVE PURCHASING OF GRAIN
              THROUGH THE LOCAL GRAIN ELEVATOR.

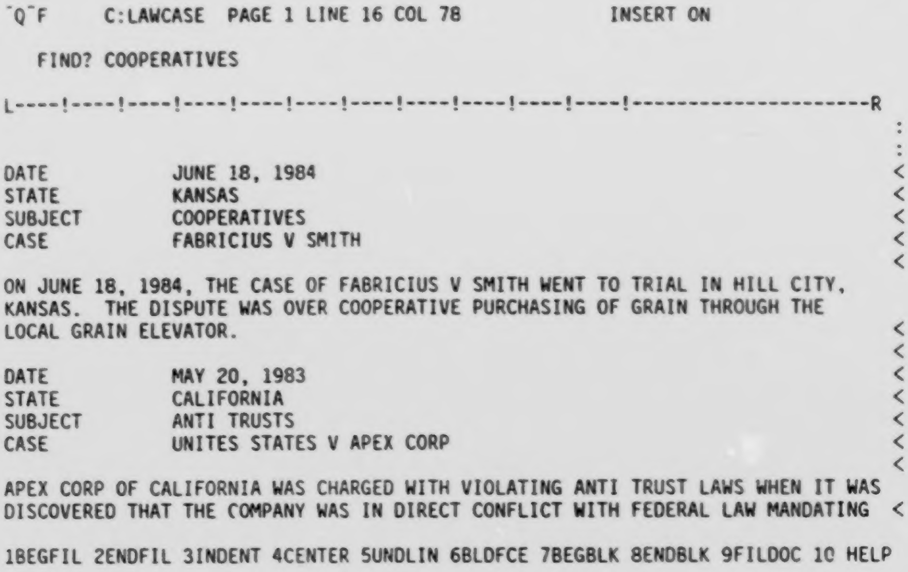

Record No.      2                              Caps
DATE         MAY 20, 1983
STATE        CALIFORNIA
SUBJECT      ANTI TRUSTS
CASE         UNITED STATES V APEX
TEXT         APEX CORP OF CALIFORNIA WAS CHARGED WITH VIOLATING ANTI TRUST LAWS W
             HEN IT WAS DISCOVERED THAT THE COMPANY WAS IN DIRECT CONFLICT WITH F
             EDERAL LAW MANDATING THE MONOPOLY OF COMMUNICATIONS.


                                               Caps

. LOCATE FOR "COOPERATIVE"$SUBJECT
Record =       1
. DISP
Record#  DATE            STATE           SUBJECT         CASE                    TE
XT
      1  JUNE 18, 1984   KANSAS          COOPERATIVES    FABRICIUS V SMITH       ON
 JUNE 18, 1984, THE CASE OF FABRICIUS V SMITH WENT TO TRIAL IN HILL CITY KANSAS.
  THE DISPUTE WAS OVER COOPERATIVE PURCHASING OF GRAIN THROUGH THE LOCAL GRAIN E
LEVATOR.
```

SAMPLE ON-LINE COMPUTER SEARCHES FOR LEGAL RESEARCH

(NOTE: Sample uses WordStar)



```
^Q^F     C:LAWCASE  PAGE 1 LINE 16 COL 78            INSERT ON

   FIND? COOPERATIVES

L----!----!----!----!----!----!----!----!----!----!----!----!--------------------R
                                                                                 :
                                                                                 :
DATE           JUNE 18, 1984                                                     <
STATE          KANSAS                                                            <
SUBJECT        COOPERATIVES                                                      <
CASE           FABRICIUS V SMITH                                                 <
                                                                                 <
ON JUNE 18, 1984, THE CASE OF FABRICIUS V SMITH WENT TO TRIAL IN HILL CITY,
KANSAS.  THE DISPUTE WAS OVER COOPERATIVE PURCHASING OF GRAIN THROUGH THE
LOCAL GRAIN ELEVATOR.                                                            <
                                                                                 <
DATE           MAY 20, 1983                                                      <
STATE          CALIFORNIA                                                        <
SUBJECT        ANTI TRUSTS                                                       <
CASE           UNITES STATES V APEX CORP                                         <
                                                                                 <
APEX CORP OF CALIFORNIA WAS CHARGED WITH VIOLATING ANTI TRUST LAWS WHEN IT WAS
DISCOVERED THAT THE COMPANY WAS IN DIRECT CONFLICT WITH FEDERAL LAW MANDATING   <

1BEGFIL 2ENDFIL 3INDENT 4CENTER 5UNDLIN 6BLDFCE 7BEGBLK 8ENDBLK 9FILDOC 10 HELP
```

Marketing/ Business Management

Category 10

GROUP REPORT WRITING IN MANAGEMENT CLASS

CONTRIBUTOR:
Nancy Cronk
William Floyd High School
Mastic Beach NY 11951

Objectives:

- The student will be able to define and identify advantages and disadvantages of the autocratic, democratic, and laissez-faire management styles.
- The student will demonstrate ability to format a short business report following a given set of formatting instructions.
- The student will develop an appreciation of the difficulties in group working situations and in the managing of groups.

Procedures:

- Explain the three management styles: autocratic, democratic, and laissez-faire.
- Divide the class into groups of six. Appoint a manager for each group.
- Provide the manager of each group with GROUP MANAGER'S HANDOUT. Instruct the manager to explain the task to the group. Each group must have a finished report prepared using word processing software. The manager determines and explains formatting instructions to the group. The manager is responsible for the preparation or delegation of the cover memorandum.
- Have students complete the COMMITTEE MEMBER'S HANDOUT. Students could be required to use word processing software to prepare their responses.
- Use the student responses as a discussion base for the topic, in this instance, "Management Styles."

Materials needed:

- Handouts: GROUP MANAGER'S HANDOUT and COMMITTEE MEMBER'S HANDOUT
- Any word processing software

Comments:

- This activity is applicable to any class using group process for teaching. This particular lesson plan was designed for a Business Analysis/Business Computer Applications class. Its purpose is to integrate management directing concepts and word processing computer applications.

GROUP MANAGER'S HANDOUT

Assume that you are the chairperson of a committee whose task is to nominate five teachers in the your school district to receive an outstanding teacher award. Any elementary, junior high, or senior high school teacher may receive this award. The criteria used to judge the teachers will be:

(1) concern for students
(2) involvement in school and community activities
(3) teaching ability

Your committee must submit five nominations. Each committee member should submit a document nominating a teacher and explaining why he or she feels the teacher should receive the award.

Your final report should include:

1. A cover memo to your teacher explaining your report.

2. Five separate pages, one for each member's nomination. The group's work should be presented in a consistent format and must be completed using word processing capabilities.

Your notes:

COMMITTEE MEMBER'S HANDOUT

LEADERSHIP FOLLOW-UP QUESTIONS

1. What type of leadership did your group leader use? (autocratic, democratic, laissez-faire)

2. Describe the problems your group experienced in assigning the responsibilities and in completing the project.

3. Did another member of your group (other than the appointed leader) make decisions for the group? Explain.

4. If you were the group leader, what would you have done differently? Why?

TEACHING MARKETING/ECONOMICS VIA CROSSWORD PUZZLES

CONTRIBUTOR:
Bob Hughes
Orange Glen High School
Escondido, CA 92025

Objectives:

- The student will be able to review Marketing/Economic terms while enhancing computer skills.

Procedures:

- Assign each student a unit or chapter that will be studied along with a list of 20 specific terms used in that chapter. Do not provide the meanings. They are to look up the definitions.
- Each student will look up the definitions for the particular terms in his/her assigned unit or section of the material being covered. This phase involves each student in finding the definitions and entering them into the computer using Crossword Magic. This activity reinforces and helps the student learn important terms. (I let the students add a few of their own terms for excitement and interest--such items as rock groups or TV stars make fun items to include.)
- Simple directions on how to use Crossword Magic are duplicated and each student creates his/her own puzzle unique to the unit or chapter that is or will be studied.
- Copies of the puzzles are duplicated and used for review. The person who wrote the puzzle then corrects the finished product and answers questions that anyone may have.

Materials needed:

- Computer software, Crossword Magic, by L & S Computerware (approximately $50), available from many software stores or: Mindscape, Inc., 3444 Dundee Road, Northbrook, IL 60062
- Dot matrix printer

Comments:

- The above has been used many times in marketing and economics classes with great success. It is easy on the teacher and you can imagine the expression on the face of the person who made the puzzle when everyone in the class is doing the puzzle that he or she created! The learning is exciting and fun for everyone involved.

Computer Literacy/ Computer Awareness/ Intro to Computers

Category 11

EXPLORING THE IBM PERSONAL COMPUTER
STUDENT WORKSHEETS

CONTRIBUTOR:
Mary Auvil
Foothill College
Middlefield Campus
Palo Alto, CA 94303

Objectives:

- The student will reinforce information and concepts learned by reviewing the training diskette, EXPLORING THE IBM PERSONAL COMPUTER.

Procedures:

- Hand out diskettes and instruct students on how to load into the computer.
- Complete Chapter 1 on the training diskette (EXPLORING THE IBM PERSONAL COMPUTER).
- Beginning with Chapter 2, students fill out the worksheet following the tutorial exactly.
- Distribute handout: WORKSHEET: EXPLORING THE IBM PERSONAL COMPUTER.
- Instruct students to circle or write in the correct answers to the questions.
- Students use their notes to review and reinforce what they learn.

Material needed:

- Handout: WORKSHEET: EXPLORING THE IBM PERSONAL COMPUTER
- Diskette: EXPLORING THE IBM PERSONAL COMPUTER

Comments:

- Some students confuse the tutorial "chapters" with book chapters. Students should be told that the tutorial sections are called "chapters" and that the worksheet applies to the disk tutorial only.

WORKSHEET: EXPLORING THE IBM PERSONAL COMPUTER

This worksheet follows the content of the tutorial diskette, "Exploring the IBM Personal Computer." As you go through the tutorial, answer the questions on the worksheet. This will help you remember the information and concepts in the tutorial. You can also review the tutorial and/or the worksheet to refresh your memory and to prepare for quizzes during the course.

The tutorial is divided into five "Chapters." Questions for each Chapter (beginning with Chapter 2) are listed below. *Circle or write in the answers.*

CHAPTER 2. The Keyboard

NOTE: Some of the keys may be in different locations on your keyboard from what is shown in the tutorial. They will work the same anyway, so find each one and use it as instructed.

1. True or False? All keys are used the same way for all programs.
2. Which of the "typewriter" keys are labeled with arrows?

   ________________ ________________ ________________ ________________
3. The key that works like a carriage return is labeled: ____________________.

   True or False? This key tells the computer to start doing something.
4. The function keys are labeled F1 through F_____.

   Where are the function keys on your keyboard? ☐ on the left. ☐ at the top.
5. The blinking line is called a ________________.
6. Other keys (also labeled with arrows) are called the ______________ keys because they move the cursor.
7. The ten keys at the right with the numbers 0 to 9 on them are part of the __________________.
8. To switch the ten keys so they will type numbers, press the ______________________.
9. What are the names of the five "modifier" keys? ________________ ________________

   ________________ ________________ ________________
10. KEY EXERCISES: Press each key and write at least one thing the key does.

    Enter____

    Backspace_____________________________________

    Tab____

    Shift____

    Home_______________________________________

    Cursor keys ___________________________________

    End ____

PrtSc ____________________

Esc ____________________

Ctrl ____________________

Alt ____________________

F1 - F10 (Function keys) ____________________

Caps Lock ____________________

Del ____________________

Ins ____________________

FUN WRITER Use the cursor keys on the numeric keypad on the right on the keyboard. Make sure the "cursor pad" and Num Lock lights are off--press the appropriate key if either is on.

After you have experimented with Fun Writer and are still on the "Practice Page," (before you go on to Chapter 3) answer the following questions. Use the keys while Fun Writer is still on your screen to find the answers.

1. If "Cursor" shows at the bottom of the Fun Writer screen, the ____________ key will change Cursor to ____________.
2. True or False? If Cursor is on, you can type a number by holding down the Shift key while you press a key on the numeric pad.
3. If Caps Lock (UPPER CASE) is on, you can type a lower case (small) letter by holding down the ____________ key while you type the letter.
4. True of False? If Caps Lock (UPPER CASE) is on, you can type a $ by just pressing the $ symbol key on the top row of the key board.
5. If the cursor is on a line of type, what key do you press to:

   a. Erase the letters to the left of the cursor? ____________

   b. Erase a letter and leave a blank space where the cursor is? ____________

   c. Erase letters under the cursor and to its right? ____________

   d. Move the cursor to the beginning of the next line? ____________

   e. Add letters in the middle of the line? ____________

CHAPTER 3. Disk Storage and DOS

1. True or False? Disk drives let you store large amounts of information.

2. We are using diskettes that work on both sides in this lab ("double-sided" diskettes). About how many characters can these diskettes store?

   a. 180,000 b. 90,000 c. 360,000

3. Which reads and writes information faster? (a) a fixed disk (b) a diskette drive

4. How many diskette drives are there in the computer you are using now? __________

   What are their names? ______________________________

5. List three important rules for handling diskettes:

   1. ____

   2. ____

   3. ____

6. To prevent accidental erasure of programs and data on a diskette, you should:

   a. Not remove it from the computer.
   b. Put a piece of foil tape over the square notch.
   c. Put a piece of clear tape over the oblong slot.

7. To prevent loss of any diskette or file you wish to preserve, you should:

   a. Make a backup copy of the diskette or file.
   b. Store the file(s) on a fixed disk.
   c. Leave the diskette in the computer at all times.

8. What is a "file"? ____

9. How many letters or numbers can there be in a file name? __________

10. You can add an extension of up to ______ letters or numbers to a file name if you separate the extension and the filename with a ________________.

11. What information about files does a Directory store?

    a. ____________________________________

    b. ____________________________________

    c. ____________________________________

    d. ____________________________________

12. What does DOS stand for? D__________________O__________________S__________________

13. What do the DOS programs manage? __________________________ and ______________________

14. If the computer is on, what keys do you press at the same time to reset the computer? ______________ + _____________ + ______________ (This is called a "warm boot.")

15. When you first start DOS, you must set the clock by entering the ____________ and ____________.

16. What is the DOS prompt? ________

17. What does the A tell you?
    - a. You should put a diskette in drive A.
    - b. Drive A is the default drive.
    - c. The diskette is already in drive A.

18. True or False? "Default drive" means this drive will be used next unless you say otherwise.

19. On the "cartoon" diskette, how large is the file named FRIENDS? _____________

20. True or False? DOS commands must be typed in uppercase (capital) letters.

21. After you formatted the cartoon diskette, what information did DOS give you about the available space on the diskette?

    ____

    ____

    (If some space was damaged and could not be used, DOS would have told you that.)

22. When you copied the file FRIENDS to the cartoon disk in drive B, what message did DOS put on the screen to let you know the copy was made?

    ____

23. When copying an entire diskette,

    The *original* is called the ____________________ diskette.

    The *copy* is called the ____________________ diskette.

24. What happens to any files that might already be on the target diskette when you use the command DISKCOPY to make a copy?
    - a. They remain on the copy without any changes.
    - b. They are transferred to the source diskette.
    - c. They are erased from the target diskette.

To review the DOS commands you just used, draw lines to connect the command with the action it causes:

Command:	*Action:*
DIR	Copies an individual file.
DISKCOPY	Erases a diskette and makes a new directory on it.
COPY	Copies an entire diskette.
FORMAT	Displays a directory of a diskette.

FOR EXPERTS ONLY: You will become an expert in this course! If you have time now, use the HELP feature in the tutorial to preview the commands you will be learning. Type HELP when you want to see a list of the commands. Not all of them are available in Practice DOS, but those that are work here just like they do in the "real thing."

CHAPTER 4. BASIC Programming

Even though you won't be learning BASIC in this course, you will find useful information in this Chapter. In particular, this will give you an idea of what a "program" is, and where DOS "stops" and lets another program take over operations. You will also get to practice using the function keys.

1. What is a "program"? ____
2. Everything that the computer does must be controlled by a ______________.
3. The DOS prompt is A>. Can you identify the BASIC prompt? What is it? __________

NOTE: Do not try to print the BASIC program at this time.

CHAPTER 5. The Printer

Follow the screen instructions for an introduction to using the printer. Before you actually try to print, make certain that the printer control box connected to your computer is switched to the right position. Ask for help if you aren't sure about this!

1. What do these lights on the printer indicate?

   POWER ______________________________________
   READY ______________________________________
   ON-LINE ____________________________________
2. What happens if you press the ON-LINE switch during printing?

   ____
3. What happens when you press the LINE FEED switch

   With ON-LINE on? ____
   With ON-LINE off? ____
4. What happens when you press the FORM FEED switch

   With ON-LINE on? ____
   With ON-LINE off? ____
5. What keys do you press to make a print of what is on the screen?

   ______________ + ______________

CONGRATULATIONS! You have completed IBM tutorial and should be well on your way to an understanding of DOS! Check your answers in the DOS Student Key book. If anything is unclear to you, be sure to ask about it. As we said in the beginning, you may want to review the tutorial and this worksheet again later to help you recall the many new terms, facts, and concepts introduced here.

Mary Auvil Business Skills Centre
Foothill College, Middlefield Campus
Palo Alto, California

MS/DOS COMMANDS

CONTRIBUTOR:
Shirley Bray
Tascosa High School
Amarillo, TX 79102

Objectives:

- The student will learn the various dimensions of the MS/DOS commands: DIR (directory), COPY, and DEL (delete).

Procedures:

- Use handouts similar to this to acquaint students with the varied dimensions of frequently used commands.

- Handouts can be used to help introduce the commands, used as study sheets once commands have been introduced, and used as a reference source throughout the class.

- Encourage students to make a note of each command they use and/or look up. Have them write a short explanation of the command's function.

- Space is provided at the end of the handout for the student to add other comments.

Materials needed:

- Handout: MS/DOS COMMANDS

- MS/DOS diskette

Comments:

- This basic procedure can be applied to any operating system.

MS/DOS COMMANDS HANDOUT

- Command: <u>DIR</u>

This command will give you a list of everything on the disk in the present directory.

If you have more than a screen full, you may use the "hold" key to stop the screen so you can read it or the DIR/P command. With this command, the first page of the list is printed to the screen. At the bottom of the screen, there is a message;

STRIKE A KEY WHEN READY . . .

Press a key and the rest of the list will scroll up.

The message at the bottom of the screen now gives the total number of files on this disk and the number of bytes of empty space left.

The "*" can be used as a wildcard to take the place of a file name or extension (the last name).

<u>DIR</u> EXAMPLES:

`C>DIR *.DWG`	-- will list all drawing files in the present directory on the hard drive
`C>DIR A:*.DWG`	-- will list all the drawing files on drive A
`C>DIR TODD.*`	-- will list all Todd's files in the present directory on the hard drive
`C>DIR A:TODD.*`	-- will list all Todd's files on drive A
`C>DIR C*.*`	-- will list everything that starts with the letter C in the present directory on the hard drive
`C>DIR A:C*.*`	-- will list everything that starts with the letter C on drive A

- Command: COPY

This command is used to copy file(s) from one disk to another by simply specifying drives and file(s) to be copied.

COPY EXAMPLES:

`C>COPY oldfile.ext newfile.ext`	-- creates a duplicate file on the hard drive; different file names must be used.
`C>COPY oldfile.ext A:newfile.ext`	-- creates a duplicate file on drive A. The file names can be identical.
`C>COPY A:*.*`	-- copies everything on drive A to the present directory on the hard drive; the files will have the same file names assigned to them.
`C>COPY *.DWG A:`	-- copies all drawing files from the hard drive to drive A; the files will have the same file names assigned to them.
`C>COPY TODD.* A:`	-- copies all of Todd's files from the hard drive to drive A; the files will have the same file names assigned to them.
`C>COPY C*.DWG A:`	-- copies all the drawing files that start with the letter C to drive A with the same file names assigned to them.

- Command: DEL

This command is used to delete file(s) from a disk by simple specifying drive and file(s) to be deleted.

DEL EXAMPLES:

`C>DEL oldfile.ext` -- deletes a file on the hard drive.

`C>DEL *.*` -- deletes everything on the hard drive; THIS IS SOMETHING YOU NEVER WANT TO DO!!

`C>DEL A:*.*` -- deletes everything on drive A

`C>DEL TODD.*` -- deletes Todd's files from the hard drive

`C>DEL A:TODD.*` -- deletes Todd's files from drive A

`C>DEL A:*.DWG` -- deletes all drawing files from drive A

`C>DEL A:C*.DWG` -- deletes all the drawing files that start with the letter C from drive A

Additional Commands:

BINARY NUMBER SYSTEM

CONTRIBUTOR:
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Objectives:

- The student will use binary notation to explore a number system other than the decimal notation system.
- The student will learn that the computer does not think; it only manages data that has been entered in a systematic way.

Procedures:

- Introduce the students to the binary system and briefly review the decimal system.
- Explain how "on" and "off" switches were originally used in computers.
- Distribute a copy of the BINARY NOTATION/DECIMAL NOTATION NUMBER LINE handout.
- Explain the number line and then have the students work through the sample problems with you. The solutions and the answers are given for each problem.
- Give students additional problems similar to the ones on the handout.
- Monitor the classwork and correct work immediately.

Materials needed:

- Handout: BINARY NOTATION/DECIMAL NOTATION NUMBER LINE

Comments:

- This idea may be treated as a puzzle that must be deciphered using a special code. High school students enjoy such a game.
- The teacher may wish to give only one sample solution and one answer to the students. Other solutions and answers could be covered before the handout is photocopied.

Terminology:

- Binary notation--a number system in which only two symbols are allowed, such as 0 and 1.
- Binary--A number system based on 2s rather than 10s (as the decimal system).

BINARY NOTATION/DECIMAL NOTATION NUMBER LINE

Use the number line to solve the following problems.

Write each binary number in decimal notation.

1. 1001
2. 111001
3. 1111101
4. 10111011

9	8	7	6	5	4	3	2	1	Binary Place Holder
256	128	64	32	16	8	4	2	1	Decimal Equivalent

Solution:					1	0	0	1	Problem 1
			1	1	1	0	0	1	Problem 2
		1	1	1	1	1	0	1	Problem 3
	1	0	1	1	1	0	1	1	Problem 4

Problem 1. 8 + 0 + 0 + 1 = 9
2. 32 + 16 + 8 + 0 + 0 + 1 = 57
3. 64 + 32 + 16 + 8 + 4 + 0 + 1 = 125
4. 128 + 0 + 32 + 16 + 8 + 0 + 2 + 1 = 187

Use the number line to solve the following problems.
Write each decimal number in binary notation.

1. 68
2. 83
3. 104
4. 99

9	8	7	6	5	4	3	2	1	Binary Place Holder
256	128	64	32	16	8	4	2	1	Decimal Equivalent

Solution:	1	0	0	0	1	0	0	Problem 1
	1	0	1	0	0	1	1	Problem 2
	1	1	0	1	0	0	0	Problem 3
	1	1	0	0	0	1	1	Problem 4

Problem 1. 68 = 64 + 4 = 1000100
2. 83 = 64 + 0 + 16 + 0 + 0 + 2 + 1 = 1010011
3. 104 = 64 + 32 + 0 + 8 + 0 + 0 + 0 = 1101000
4. 99 = 64 + 32 + 0 + 0 + 0 + 2 + 1 = 1100011

AIRPLANE SEATING SELECTION EXERCISE

CONTRIBUTOR:
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San Antonio High School
Petaluma, CA 94952

Objectives:

- The student will acquire an increased awareness of computer uses in our society.

Procedures:

- Duplicate master copy for students.

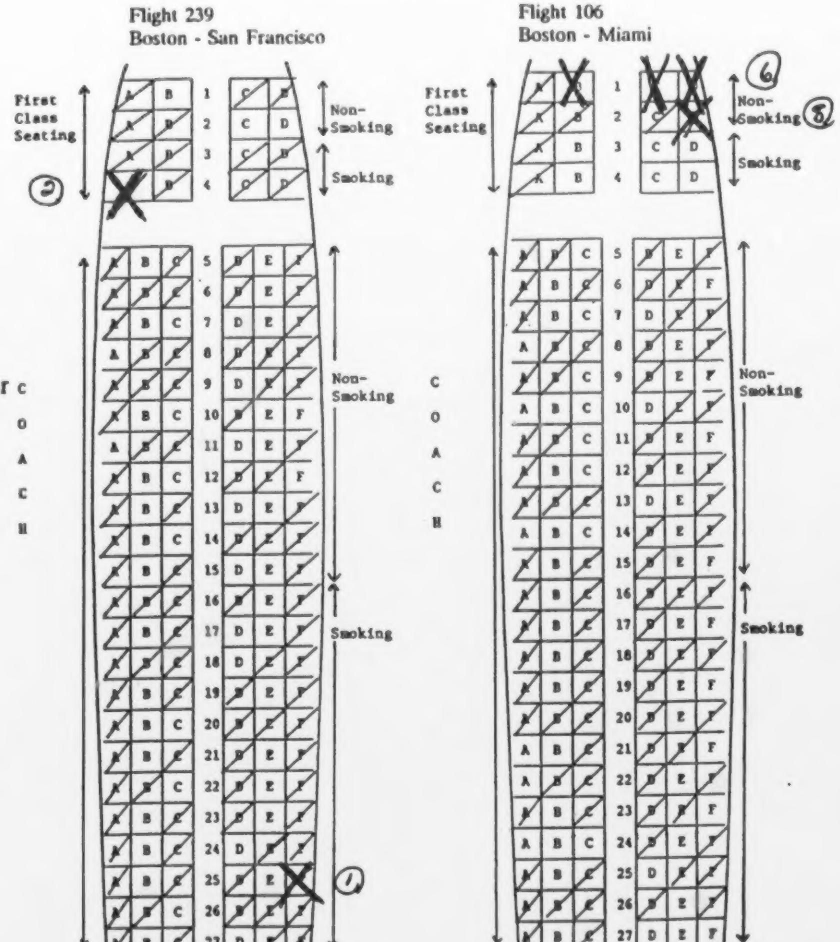
Materials needed:

- Handouts: AIRPLANE SEATING SELECTION EXERCISE and AIRPLANE SEATING CHART

Key:

1. 25F
2. 4A
3. Answers will vary
4. Answers will vary
5. Several choices
6. 1 BCD
7. Answers will vary
8. 2D
9. Answers will vary
10. Answers will vary
11. These vary also because some people do not care where they sit.
12. ± 30% = Total from answer 11 (Number will vary)/154

SEAT ASSIGNMENTS–SAHS AIRLINES


Flight 239
Boston - San Francisco
First Class Seating
Non-Smoking
Smoking
COACH
Non-Smoking
Smoking
②
①
Flight 106
Boston - Miami
First Class Seating
Non-Smoking
Smoking
COACH
Non-Smoking
Smoking
⑥
⑧

AIRPLANE SEAT SELECTION EXERCISE

Directions: One of the uses of computers is to determine seat assignments on airplanes. Using the two airplane seat assignment diagrams on the next page, you are to determine if there is any room on the specific flight, then determine the seat assignments. Write the row number and seat letter for the answer to the questions below. Cross-out (x) the seat or seats that you have assigned to the prospective passengers. Seats already assigned by the computer are crossed out.

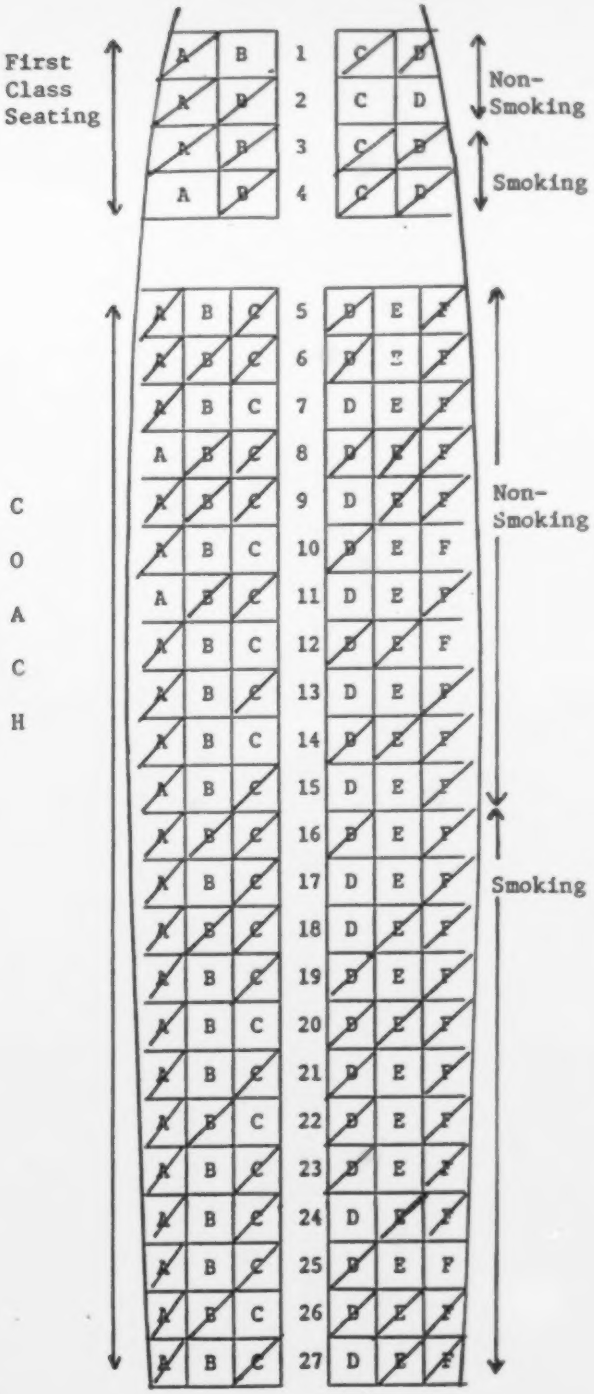
Considerations: Airplanes have both smoking and non-smoking sections in with first class and coach sections. Seats in the first class section cost more than seats in the coach section. There are two flights:

(1) Flight #239 is going to San Francisco (SFO)
(2) Flight #106 is going to Miami.

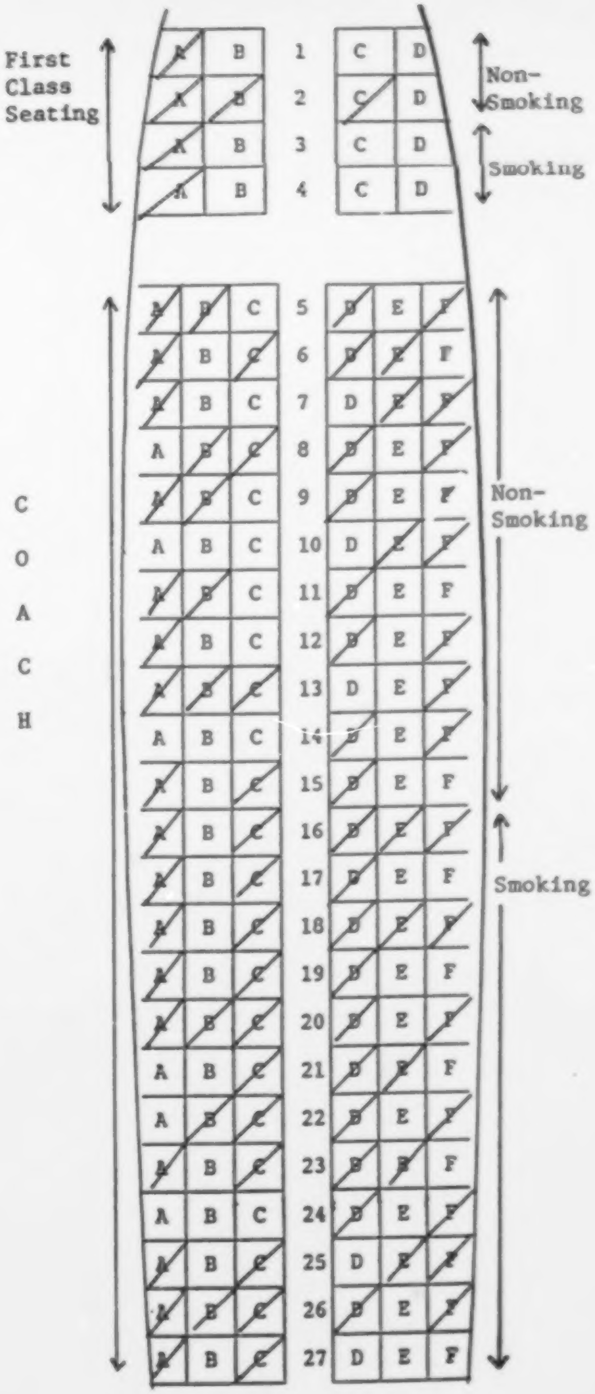
________ 1. Mr. Smith is taking Flight 239 and needs a window seat in the smoking coach section.
________ 2. Mr. Jones is going to San Francisco (SFO) in the first class section and needs a window seat in the smoking section.
________ 3. Ms. Wright is taking Flight 239 and will ride in the coach section and has no preference to smoking or non-smoking sections.
________ 4. Mr. and Mrs. Black and their two children are going to SFO in the coach non-smoking section. They would like to sit near each other.
________ 5. Mr. and Mrs. Grey want window seats for the trip to Miami in the coach non-smoking section.
________ 6. ABC Company is sending three executives first class to Miami for a conference. One is a non-smoker. They need to sit near each other as they will be discussing plans for their presentation at the conference.
________ 7. The XYZ Travel Agency called and has three students going to Miami on vacation, and they want to sit together in the coach section. They have no preference as to location.
________ 8. Mr. Sun on Flight 106 wants first class, non-smoking.
________ 9. Miss Moon is going on vacation with her mother and dad to Miami in the non-smoking coach section.
________10. The SAHS Travel Agency called and needs four seats, first class, if possible, two non-smoking and two smoking, for its four employees to go to a travel conference in Oakland.
________11. Determine how many seats are still available on Flight 239.
First Class, smoking________
First Class, non-smoking________
Coach, smoking ________
Coach, non-smoking ________
________12. What percent of the seats on the whole aircraft, Flight 239, is not filled? (Divide the total number of seats in question 11 by the total number of seats on the plane--you will need to count them.)

SEAT ASSIGNMENTS--SAHS AIRLINES

Flight 239
Boston - San Francisco


First Class Seating
Non-Smoking
Smoking
COACH
Non-Smoking
Smoking

Flight 106
Boston - Miami


First Class Seating
Non-Smoking
Smoking
COACH
Non-Smoking
Smoking

HOW DOES A COMPUTER WORK?
WHAT COMPUTERS CAN AND CANNOT DO

CONTRIBUTOR:
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Petaluma, CA 94952

Objectives:

- The student will learn how the different parts of the computer work together.

Procedures:

- Explain to students how a computer works and what you can expect a computer to be able to do and why.
- Give students copies of the two worksheets.

Materials needed:

- Worksheets: HOW DOES A COMPUTER WORK? and WHAT COMPUTERS CAN AND CANNOT DO

Comments:

- The handout, WHAT COMPUTERS CAN AND CANNOT DO, can be expanded from your class presentation/discussion.
- The handout can be expanded to a class project. Students can be asked to contribute similar statements; however, they should be able to "prove" their statements through newspaper/magazine articles, verified personal observation, pictures, etc.

Keys:

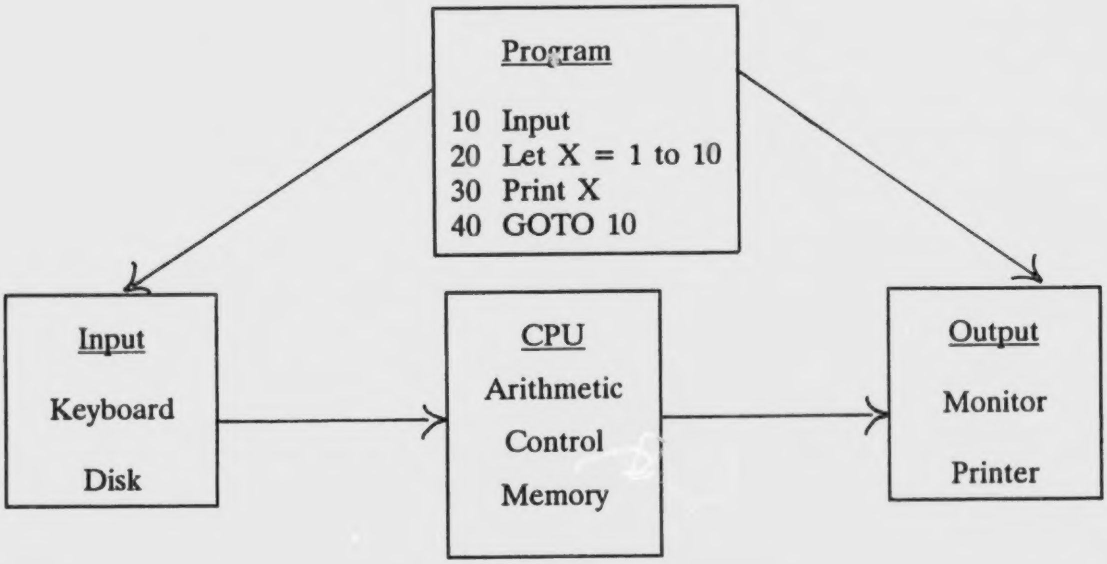
- HOW DOES A COMPUTER WORK?

1. Program
2. Input
3. CPU/Arithmetic
4. CPU/Control
5. CPU/Memory
6. Output

- WHAT COMPUTERS CAN AND CANNOT DO

1. No
2. Yes
3. Yes
4. Yes
5. Yes
6. Yes
7. No
8. Yes
9. No
10 Yes

HOW DOES A COMPUTER WORK?



```
10  Input
20  Let X = 1 to 10
30  Print X
40  GOTO 10
```

Match each part shown in the boxes above with the correct description below. Write the name of the part in the blank beside its description.

1.____________________ tells the computer what to do and how to go about it.

2.____________________ puts information into the computer, usually on a keyboard that looks like a typewriter.

3.____________________ can add, subtract, and solve other kinds of problems.

4.____________________ controls all the operations in the computer.

5.____________________ stores information within the computer or on cassette tapes or magnetic disks. Information (including programs) can be recalled from here by the computer when needed.

6.____________________ provides the answer to a problem, usually on a screen that looks like a television or makes a hardcopy on a printer.

WHAT COMPUTERS CAN AND CANNOT DO

Below are ten statements. Some describe what a computer really can do, and some describe what a computer cannot do. Write "yes" in front of each activity you think a computer can perform. Write "no" in front of those you think a computer cannot perform.

______ 1. A computer can think creatively.

______ 2. A computer can help your teacher.

______ 3. A computer can compose music.

______ 4. A computer can guide rocket ships.

______ 5. A computer can play chess.

______ 6. A computer can draw pictures.

______ 7. A computer can dream.

______ 8. A computer can help predict weather.

______ 9. A computer can eat.

______ 10. A computer can help you spell correctly.

On the line below, try making up your own statement about what a computer can or cannot do.

____

TEACHING COMPUTER TERMINOLOGY VIA CROSSWORD PUZZLE

CONTRIBUTOR:
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Objectives:

- The student will build and strengthen a computer terminology vocabulary.

Procedures:

- Review computer terminology with students.
- Distribute the crossword puzzle to students and have them find the solutions.

Materials needed:

- Crossword puzzle: COMPUTER TERMINOLOGY CROSSWORD PUZZLE

Comments:

- Crossword puzzle prepared with MECC (Minnesota Educational Computing Corporation) software; 3490 Lexington Ave. N., St. Paul, MN 55126.

Answer:

```
I N P U T         H   H
    R             A   A   D
    O       M I C R O C H I P
    G         N   D   K   S
    R     D   T   W   E   K
    A     A   E   A   R   E
C O M P U T E R   R       T
      R   A   F   E       T
      I       A         M E M O R Y
      N       C         O   E
S O F T W A R E         D   N
  U   E                 E   U
  T   R                 M
  P
  U
  T
```

Word List:

COMPUTER
DATA
DISKETTE
HACKER
HARDWARE

INPUT
INTERFACE
MEMORY
MENU
MICROCHIP.

MODEM
OUTPUT
PRINTER
PROGRAM
SOFTWARE

COMPUTER TERMINOLOGY CROSSWORD PUZZLE

```
+-----------------------------------------------------------------------+
|1. |   |2. |   |   |XXX|XXX|XXX|XXX|3. |XXX|4. |XXX|XXX|XXX|XXX|XXX|XXX|
|   |   |   |   |   |XXX|XXX|XXX|XXX|   |XXX|   |XXX|XXX|XXX|XXX|XXX|XXX|
|-----------------------------------------------------------------------|
|XXX|XXX|   |XXX|XXX|XXX|XXX|XXX|XXX|   |XXX|   |XXX|5. |XXX|XXX|XXX|XXX|
|XXX|XXX|   |XXX|XXX|XXX|XXX|XXX|XXX|   |XXX|   |XXX|   |XXX|XXX|XXX|XXX|
|-----------------------------------------------------------------------|
|XXX|XXX|   |XXX|XXX|XXX|6. |7. |   |   |   |   |   |   |   |XXX|XXX|XXX|
|XXX|XXX|   |XXX|XXX|XXX|   |   |   |   |   |   |   |   |   |XXX|XXX|XXX|
|-----------------------------------------------------------------------|
|XXX|XXX|   |XXX|XXX|XXX|XXX|   |XXX|   |XXX|   |XXX|   |XXX|XXX|XXX|XXX|
|XXX|XXX|   |XXX|XXX|XXX|XXX|   |XXX|   |XXX|   |XXX|   |XXX|XXX|XXX|XXX|
|-----------------------------------------------------------------------|
|XXX|XXX|   |XXX|XXX|8. |XXX|   |XXX|   |XXX|   |XXX|   |XXX|XXX|XXX|XXX|
|XXX|XXX|   |XXX|XXX|   |XXX|   |XXX|   |XXX|   |XXX|   |XXX|XXX|XXX|XXX|
|-----------------------------------------------------------------------|
|XXX|XXX|   |XXX|XXX|   |XXX|   |XXX|   |XXX|   |XXX|   |XXX|XXX|XXX|XXX|
|XXX|XXX|   |XXX|XXX|   |XXX|   |XXX|   |XXX|   |XXX|   |XXX|XXX|XXX|XXX|
|-----------------------------------------------------------------------|
|9. |   |   |10.|   |   |   |   |XXX|   |XXX|XXX|XXX|   |XXX|XXX|XXX|XXX|
|   |   |   |   |   |   |   |   |XXX|   |XXX|XXX|XXX|   |XXX|XXX|XXX|XXX|
|-----------------------------------------------------------------------|
|XXX|XXX|XXX|   |XXX|   |XXX|   |XXX|   |XXX|XXX|XXX|   |XXX|XXX|XXX|XXX|
|XXX|XXX|XXX|   |XXX|   |XXX|   |XXX|   |XXX|XXX|XXX|   |XXX|XXX|XXX|XXX|
|-----------------------------------------------------------------------|
|XXX|XXX|XXX|   |XXX|XXX|XXX|   |XXX|XXX|XXX|XXX|11.|   |12.|   |   |   |
|XXX|XXX|XXX|   |XXX|XXX|XXX|   |XXX|XXX|XXX|XXX|   |   |   |   |   |   |
|-----------------------------------------------------------------------|
|XXX|XXX|XXX|   |XXX|XXX|XXX|   |XXX|XXX|XXX|XXX|   |XXX|   |XXX|XXX|XXX|
|XXX|XXX|XXX|   |XXX|XXX|XXX|   |XXX|XXX|XXX|XXX|   |XXX|   |XXX|XXX|XXX|
|-----------------------------------------------------------------------|
|13.|14.|   |   |   |   |   |   |XXX|XXX|XXX|XXX|   |XXX|   |XXX|XXX|XXX|
|   |   |   |   |   |   |   |   |XXX|XXX|XXX|XXX|   |XXX|   |XXX|XXX|XXX|
|-----------------------------------------------------------------------|
|XXX|   |XXX|   |XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|   |XXX|   |XXX|XXX|XXX|
|XXX|   |XXX|   |XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|   |XXX|   |XXX|XXX|XXX|
|-----------------------------------------------------------------------|
|XXX|   |XXX|   |XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|   |XXX|XXX|XXX|XXX|XXX|
|XXX|   |XXX|   |XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|   |XXX|XXX|XXX|XXX|XXX|
|-----------------------------------------------------------------------|
|XXX|   |XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|
|XXX|   |XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|
|-----------------------------------------------------------------------|
|XXX|   |XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|
|XXX|   |XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|
|-----------------------------------------------------------------------|
|XXX|   |XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|
|XXX|   |XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|XXX|
+-----------------------------------------------------------------------+
```

ACROSS:

1. Information arriving at a device
2. A small silicon material part formed by 10 to 10,000 circuit elements
9. Any device that can receive and then follow instructions
11. The portion of a computer which stores information
13. Program

DOWN:

2. A sequence of instructions that describe a process
3. The physical parts of a computer
4. Person that likes to play with computers
5. A magnetic medium used to store data
7. Two devices that communicate with one another
8. Information of any kind
10. A peripheral that makes hard copy of letters and numbers
11. A device that helps transfer information over telephone lines
12. A list of options from which to choose
14. Information leaving from a device or process

SUGGESTED COMPUTER LITERACY CURRICULUM
GRADES 5-12

CONTRIBUTOR:
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Benton Harbor, MI 49022

The following is a proposed guideline for a comprehensive and cohesive computer literacy curriculum for grades 5-12.

ELEMENTARY/JUNIOR HIGH SCHOOL

Grade 5

Fifth grade students will complete 18 weeks, one hour a week, of computer literacy and 18 weeks, one hour a week, of C.A.I.

General Objectives:

1. The student will learn computer terminology.
2. The student will learn about computer software and hardware.
3. The student will learn the home row and special function keys of the keyboard.
4. The student will use a sequencing logic program--LOGO.
5. The student will use C.A.I. software in math, English, and other subject areas.

Grade 6

Sixth grade students will complete 18 weeks, one hour a week, of computer literacy and 18 weeks, one hour a week, of C.A.I.

General Objectives:

1. The student will review computer terminology, computer software and hardware, keyboarding, and basic computer concepts.
2. The student will learn simple word processing concepts and applications--Bank Street Writer.
3. The student will learn how to use a printer.
4. The student will use a writing program--Story Tree.
5. The student will use C.A.I. software in math, English, and other subject areas.

Grade 7

Seventh grade students will complete nine weeks, five hours a week, of keyboarding/typing using microcomputers and keyboarding/word processing software programs.

General Objectives:

1. The student will learn the alphabetic keys using the touch method of typing.
2. The student will learn the computer keyboard including special function keys.

COMPUTER LITERACY CURRICULUM
Page 2

3. The student will learn basic machine operations.
4. The student will learn computer terminology.
5. The student will learn word processing concepts and applications--Bank Street Writer.

Grade 8

Eighth grade students will complete nine weeks, five hours a week, of computer literacy with emphasis on computer awareness and using the computer as a tool.

General Objectives:

1. The student will learn what computers are.
2. The student will learn the capabilities and limitations of computers.
3. The student will learn the implications of the computer on society.
4. The student will learn how computers are used in the world of work.
5. The student will learn computer terminology.
6. The student will use the computer as a tool--word processing and turtle graphics.

HIGH SCHOOL

All students graduating from high school are required to complete one semester of Keyboarding/Personal Typing (first year typing would waive this requirement) and one semester of Computer Literacy.

Keyboarding/Personal Typing

General Objectives:

1. The student will learn the alphabetic and upper numeric keys by the touch method of typing.
2. The student will learn proper proofreading skills.
3. The student will enhance his/her communication skills.
4. The student will use the typewriter to complete basic applications: personal business letters, letters of application, and personal data sheets.

High School Computer Literacy

General Objectives:

1. The student will learn what computers are and how they evolved.
2. The student will learn the capabilities and limitations of computers.
3. The student will learn the implications of the computer on society.
4. The student will learn about computer careers.

5. The student will learn computer terminology.
6. The student will use the computer as a tool: word processing, data base management, business graphs, spreadsheets, and telecommunications.
7. The student will learn simple DOS commands.
8. The student will learn simple programming skills.
9. The student will learn how to evaluate computer software.

CONCLUSIONS

Keyboarding/typing skills, computer awareness, and using the computer as a tool are cumulative--what can be learned at one level is heavily dependent upon what has been learned at a previous level. Therefore, the initial exposure is of great importance and the coordination between the different instructional levels is crucial.

Because we do not know the eventual career choices of our students and what their skill and knowledge needs will be, we need to provide all students with a solid base upon which to build.

INTRODUCTION TO PRIMARY COMPUTER TERMS

CONTRIBUTOR:
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Lorain City Schools
Lorain, OH 44052

Objectives:

- The student will be introduced to primary computer terms and to how information is processed through a computer.

Procedures:

- After appropriate classroom discussion and /or background textbook, have the students complete this assignment.
- Distribute handout (VOCABULARY: HARDWARE AND PROCESS) to students.
- Discuss with student the different computer components. Have the class develop a simple definition of each component, which each student writes under each block on his/her worksheet and the teacher places on board.
- Have students identify component parts or examples of the terms listed on the handout.
- (Optional) Give the students a very simple program and explain the process of input and output.

Materials needed:

- Handout: VOCABULARY: HARDWARE AND PROCESS WORKSHEET
- Computer/printer
- Computer program (optional)

Comments:

- Very useful activity for elementary students or older remedial students.

Key:

1. INPUT
   Keyboard
   Voice
   Temperature
2. MEMORY
   RAM
   ROM
   Bits
   Bytes
   Storage
3. C.P.U.
   Arithmetic/Logic
   Control
4. OUTPUT
   Monitor
   CRT
   Hard copy
   Disk drive (disk storage)
   Telecommunications

VOCABULARY: HARDWARE AND PROCESS

MEMORY

Definition:

INPUT

Definition:

OUTPUT

Definition:

C.P.U.

Definition:

1. INPUT

3. C.P.U.

2. MEMORY

4. OUTPUT

BINARY NUMBERS

CONTRIBUTORS:
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Janell Scharer Brett
Mt. Whitney High School
Visalia, CA 93277

Objectives:

- The student will translate the binary number system to the decimal number system and vice-versa.

Procedures:

- Distribute flash cards printed with binary numbers 0 and 1.
- Teacher presentation:
  a. definition of binary
  b. derivation of bit and byte
    1) binary digit
    2) byte = 8 bits
  c. binary code on board
    128 64 32 16 8 4 2 1
    (notice each number doubles)
- Select students at random to place their flash card under one binary code.
- Provide independent practice. Convert binary numbers to decimal numbers (use scratch paper) as needed.
- Check for student's understanding. Monitor and adjust.
- After three sets of students have participated, reverse the procedure and put a decimal number on the board. Have the class decide which binary digits will be charged (on). The teacher will put cards in the chosen places.
- Distribute the handout for binary number conversion for classwork and/or homework.

Materials needed:

- Teacher-prepared 4" x 5" flash cards printed with binary numbers 0 and 1
- Scratch paper
- Handout: THE BINARY NUMBER SYSTEM

Name ______________________________

Period _____ Date __________________

COMPUTER LITERACY
The Binary Number System

128 64 32 16 8 4 2 1

1. Use the binary code to decode the following bytes:

a. 01001010 = ______
b. 01001100 = ______
c. 10000110 = ______
d. 11000001 = ______
e. 00010010 = ______
f. 00100100 = ______
g. 01000110 = ______
h. 10000010 = ______

i. 01001001 = ______
j. 01001110 = ______
k. 00010011 = ______
l. 00000011 = ______
m. 10000011 = ______
n. 00011100 = ______
o. 00001000 = ______
p. 00101100 = ______

2. Change the following decimal numbers into binary numbers, indicate an "on" circuit by pencilling in the appropriate O's.

Example. 10 = 0 0 0 0 0 0 0

a. 68 = 0 0 0 0 0 0 0 0
b. 35 = 0 0 0 0 0 0 0 0
c. 150 = 0 0 0 0 0 0 0 0
d. 145 = 0 0 0 0 0 0 0 0
e. 19 = 0 0 0 0 0 0 0 0
f. 33 = 0 0 0 0 0 0 0 0
g. 111 = 0 0 0 0 0 0 0 0
h. 28 = 0 0 0 0 0 0 0 0

b. 130 = 0 0 0 0 0 0 0 0
c. 23 = 0 0 0 0 0 0 0 0
d. 75 = 0 0 0 0 0 0 0 0
e. 200 = 0 0 0 0 0 0 0 0
f. 193 = 0 0 0 0 0 0 0 0
g. 216 = 0 0 0 0 0 0 0 0
h. 300 = 0 0 0 0 0 0 0 0
i. 96 = 0 0 0 0 0 0 0 0

NUMBER SYSTEMS--THE HISTORY OF COUNTING

CONTRIBUTORS:
Pauline Litchfield
Janell Scharer Brett
Mt. Whitney High School
Visalia, CA 93277

Objectives:

- The student will discover the first systems used for counting, then complete research to find inventions which developed later based on the need for better calculating.

Procedures:

- This lesson takes place after a filmstrip ("Pebbles to Programs," ABACUS to IBM).
- On a piece of paper, have the students trace their hand.
- Before machine inventions, there were several counting devices:
  - a. fingers
  - b. stones, pebbles, or wood
    - 1) dirt of sand
    - 2) sand box
    - 3) notches on wood or stone
  - c. abacus--string beads
- If DIGIT comes from the Latin word "digitus" meaning finger and DECIMAL comes from the Latin word "deca" meaning ten
  - a. How do you suppose we came up with our present numbering system (decimal system)?
  - b. Do you think the methods depicted on the "hand" could also be used for adding, subtracting, multiplying, and dividing? Explain your answer.
- After the students have discussed these primitive methods of counting, assign appropriate textbook reading (or library assignment) dealing with how the need for more efficient calculating lead to better machine inventions.

Materials needed:

- Filmstrip: "From Pebbles to Programs," $150-175, (New York: Guidance Associates, 1975), 757 Third Avenue, New York, NY 10017

TYPES OF COMPUTER SYSTEMS

CONTRIBUTORS:
Pauline Litchfield
Janell Scharer Brett
Mt. Whitney High School
Visalia, CA 93277

Objectives:

- The student will be able to identify characteristics of the mainframe computer, minicomputer, and microcomputer. The student will also depict similarities and differences between the three types of computers.

Procedures:

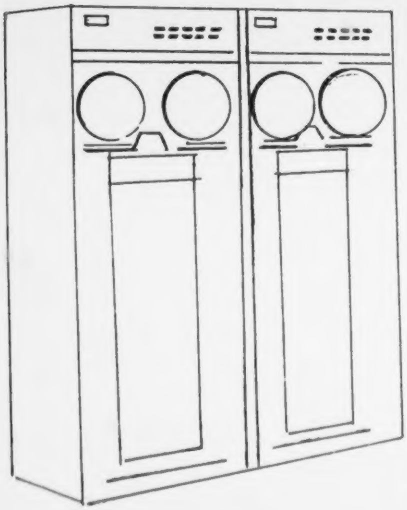
- Have students study related chapters in their textbooks/resource materials prior to using this exercise.
- Distribute the handout (TYPES OF COMPUTER SYSTEMS) and describe and define what the students are to discuss in their groups:
    a. size (physical)
    b. capacity (storage--how much)
    c. uses (Who and what type of a company or organization would use it?)
    d. How do you communicate with it?
    e. How does it communicate with other computers?
- Divide the class into three groups for discussion (assuming approximately 24 students are in the class).
    a. Mainframe (2 groups of 4)
    b. Minicomputer (2 groups of 4)
    c. Microcomputer (2 groups of 4)
- Set a time limit--15 to 20 minutes suggested.
- Use the overhead or the board to organize information from the groups.
- For homework or final assignment after the discussion and handouts are completed, have the students:
    a. Write a paragraph on how the three types of computers are alike.
    b. Write a second paragraph on how the three types of computers differ.

Materials needed:

- Handout: TYPES OF COMPUTER SYSTEMS

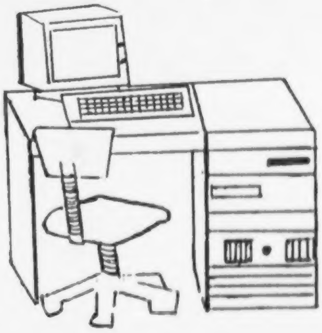
TYPES OF COMPUTER SYSTEMS

Mainframe Computer



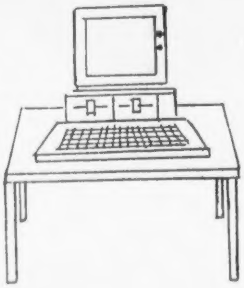
Characteristics:

Minicomputer



Characteristics:

Microcomputer



Characteristics:

KEY TO TYPES OF COMPUTER SYSTEMS

Mainframe Computer

1. large
2. takes up entire room
3. costly
4. connected by terminal telephone lines
5. large companies, universities, government makes use of them
6. Handle more than one job at a time
7. Communicates from one company or city to another

Minicomputer

1. smaller
2. Cost-at least \$10,000 as much as \$100,000
3. Communicates in a department or one area
4. Handles more than one job at a time
5. terminals connected to them
6. Communicates to terminals by cables or telephone lines
7. All sizes of companies can use them

Many school systems use mini (administrative)

Microcomputer

1. Can sit on a desk
2. Also called personal or home computer
3. move easily
4. Usually costs less than \$6,000
5. Can do only one job at a time
6. Can do many different jobs
7. Used in schools, at homes, and small businesses
8. Used for games

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HOW TO BUY A MICROCOMPUTER

CONTRIBUTOR:
John Majernik
Belvidere High School
Belvidere, IL 61008

Objectives:

- The student will acquire an understanding of the points to consider when purchasing a microcomputer.

Procedures:

Variations:

- Administer the questionnaire toward the end of the course as a summary exercise. Students transfer their acquired knowledge to the selection of their own computer.
- Use the questionnaire as the basis for a unit of study on computer and peripheral equipment. Students make decisions as they study the unit.
- Give the students the questionnaire early in the term. As the term progresses and different aspects of computers are studied, students gain the knowledge to complete the questionnaire.
- Use as a group project. Assign groups of students different computer budgets or different uses as purposes for purchasing a microcomputer. Use the questionnaire as a guide to preparing their evaluation and report.
- Once students have used the questionnaire, have them suggest other points to be considered.

Materials needed:

- Questionnaire: HOW TO BUY A MICROCOMPUTER

Comments:

- The basic questionnaire provides considerable flexibility of use for several classes.
- The students will need to be instructed to circle or check the features they are selecting. They will also need to use a scratch pad for notes and for calculations.
- After using the questionnaire to evaluate the purchase of a computer, advanced students could develop a questionnaire for evaluating groups of software packages.

HOW TO BUY A MICROCOMPUTER

1. What do I want my computer to do?
   - A. Entertain
   - B. Manage my home
   - C. Educate
   - D. Improve personal productivity
2. What software programs do I want?
   - A. Recreational software
     1. arcade-type games
     2. adventure games
     3. strategy games
     4. music composition
     5. graphics creation
   - B. Educational software
     1. mathematics
     2. spelling
     3. touch typing
     4. foreign languages
     5. speed-reading
     6. science
     7. English
   - C. Home management software
     1. data base manager
     2. word processing
     3. budgeting
     4. tax calculation
   - D. Personal business software
     1. electronic spreadsheet
     2. accounting
     3. stock market analysis
     4. electronic mail
     5. spelling checker
     6. scheduling
     7. business graphics
3. How do the computers compare?
   - A. Ease of use
   - B. Software
   - C. Columns
   - D. Resolution
   - E. Color
   - F. Sound
   - G. Expandability
   - H. Interfaces
   - I. Support
   - J. Repair
   - K. Initial memory
4. Some special considerations:
   - A. How much memory does the software need?
   - B. Should I buy cassettes, cartridges, or diskettes?
   - C. What kind of keyboard will I like?
     1. membrane
     2. calculator-style
     3. typewriter-style
     4. detachable
   - D. What special keyboard controls are available?
     1. numeric pad
     2. function keys
     3. cursor control keys
     4. graphics keys
     5. lower case
5. What kind of display do I want?
   - A. Regular tv
   - B. Monitor
   - C. High-resolution monitor
6. Will I need a printer? What kind?
   - A. Method of print
     1. heat-sensitive (thermal)
     2. dot matrix
     3. letter quality (impact)
   - B. Method of paper feed
     1. friction feed
     2. pin feed
     3. tractor feed
7. What peripherals should I consider?
   - A. Tape drive
   - B. Disk drive
   - C. Printer
   - D. Game controllers--joysticks, game paddles, trackballs
   - E. Modem
   - F. Speech synthesizer
   - G. Light pen
   - H. Mouse
   - I. Plotter
   - J. Home controller
8. What's my computer budget?

9. Other considerations:

COMPUTER LITERACY EVALUATION

CONTRIBUTOR:
Irma Nielsen
Kinder High School
Kinder, LA 70648

Objectives:

- The student will demonstrate a general knowledge of computer literacy.

Procedures:

- Administer the computer-generated test. Sample test shown: COMPUTER LITERACY TEST.

Materials needed:

- Test master from which photocopies are made
- Scantron Forms or Answer Sheet
- Computer test-generating software

Comments:

- Using a computer-generated test allows the teacher the flexibility of picking and choosing specific test items from a general bank of test items entered previously. Although more time may be needed up front to enter test items, time is saved when the teacher needs to alter the test to reflect specific topics. The teacher simply selects those test items that apply and prints out a master copy of the test.
- This sample test was prepared with TESTMASTER by Midwest Software, Box 214, Farmington, MI 48024. This software produces the test, answer blanks, and the key.

Key:

```
ANSWER KEY FOR - COMPUTER LITERACY TEST

PART 1. MULTIPLE CHOICE

 1. A              4. A              7. B              10. C

 2. B              5. B              8. A

 3. A              6. A              9. B
```

COMPUTER LITERACY TEST

PART 1. MULTIPLE CHOICE

1. AN EXAMPLE OF A NUMERIC VARIABLE.
   - A. 145
   - B. JACK
   - C. MONEY

2. READ ONLY MEMORY IS PERMANENT MEMORY AND STAYS IN THE COMPUTER EVEN WHEN IT IS TURNED OFF.
   - A. FALSE
   - B. TRUE

3. I/O STANDS FOR INPUT/OUTPUT.
   - A. TRUE
   - B. FALSE

4. THE MOST COMMON INPUT DEVICE IS THE MOUSE.
   - A. FALSE
   - B. TRUE

5. AN EXAMPLE OF AN ALPHANUMERIC VARIABLE.
   - A. MARY
   - B. 13
   - C. 1

6. COMPUTERS OPERATE SO RAPIDLY THAT THEY ARE OFTEN USED BY MORE THAT ONE PERSON, IN A TIME-SHARING SYSTEM.
   - A. TRUE
   - B. FALSE

7. EDITING INVOLVES STORING A PROGRAM ON A DISK.
   - A. TRUE
   - B. FALSE

8. THE CENTRAL PROCESSING UNIT CONSISTS OF THE CONTROL UNIT AND THE ARITHMETIC LOGIC UNIT.
   - A. TRUE
   - B. FALSE

9. BLAISE PASCAL WROTE THE PASCAL LANGUAGE.
   - A. TRUE
   - B. FALSE

10. THE MOST COMMON TYPES OF OUTPUT ARE....
    - A. CRT AND TAPES
    - B. KEYBOARD AND DISKS
    - C. MONITOR AND PRINTER

COMPUTER LITERACY TEST PAGE 1 NAME ____________________

PART 1. MULTIPLE CHOICE

1. ______________ 4. ______________ 7. ______________ 10. ______________

2. ______________ 5. ______________ 8. ______________

3. ______________ 6. ______________ 9. ______________

ELEMENTARY SCHOOL (5TH)

CONTRIBUTOR:
Linda Osborne
Live Oak Elementary
San Antonio, TX 78148

Objectives:

- The student will research how computers enhance the American society--and combine a career education component as an extended activity.

Procedures:

- Have students do an awareness search of all places they see computers in use.
    a. Have students start by asking their parents if they work with computers.
    b. If not, ask their parents if computers are used where they work. If so, how?
- Have students compile a list of all places they have seen computers being used.
- Have students discuss their findings as a class and create subtitles of areas where computers are used. (See SOCIETAL AWARENESS handout.)
    a. Education
    b. Government
    c. Business
    d. Medicine
- Following the lists of computer uses compiled by the class, have students work in groups to list as many different computer-related jobs as they can. Discuss their findings and list on the board.
- To extend the activity:
    -- Assign a worksheet on computer careers.
    -- Have students pick one computer-related career to research and write a short report.
    -- Have students collect articles about computer-related jobs or samples of computer printouts to display in the room.

Materials needed:

- Handout: SOCIETAL AWARENESS
- Reference materials and periodicals
- Paper, markers, and worksheet

Societal Awareness

List all the ways computers are used in each of the following areas.

Education

Government

Business

Medicine

c1987 L.Osborne

COMPUTER LITERACY SPECIAL CREDIT PROJECT

CONTRIBUTOR:
Nan Shapiro
La Serna High School
Whittier, CA 90605

Objectives:

- The student will design/select his/her own special credit projects to learn more about computers.

Procedures:

- Have students earn an assigned number of special credit points (i.e., 100 points) as part of their grade.
- Have students earn the points by designing/selecting one or more special credit assignments.
- Give the students a list of ideas and guidelines as a starting point:

  Sample special credit projects:
  - -- A summary of an article (10 points)
  - -- Book report (50 points)
  - -- Build a model of a computer (50 points)
  - -- Report on a movie that focuses on the use of computers (10 points)
  - -- Shop around and make a plan for buying a system (50 points)
  - -- Interview someone that works with computers (30 points)
  - -- Write a simple computer program (20 points)
  - -- Demonstrate a software program to the class (35 points)
- Have students get approval of their ideas from you so that you can make sure the projects are acceptable. Give the students an idea of how many points they can earn with that project.
- Require students to sign a contract with an intent of what they plan to do to complete the special credit and the date the special credit project is due. Include several progress check dates depending upon project complexity.
- Use your tickler file and place photocopies of the contracts under the first progress check dates for the students.

Comments:

- The most difficulty students encounter is managing their time wisely to complete the assignments on time. If you give the students progress dates (plus bonus points for making the date), they have a positive incentive to complete the work. The bonus points can quickly turn to penalty points if the project is not turned in within your time frame. For example, projects turned in on time, five bonus points. Projects turned in one day late, five penalty points. Add one penalty point for each additional late day.

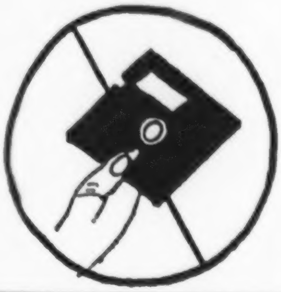
SOFTWARE CARE

CONTRIBUTOR:
Nan Shapiro
La Serna High School
Whittier, CA 90605

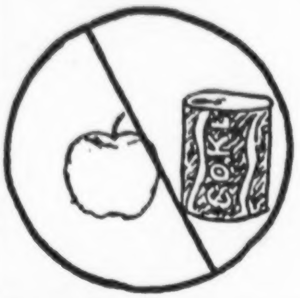
Comments:

- This has been especially effective with bilingual and remedial students.

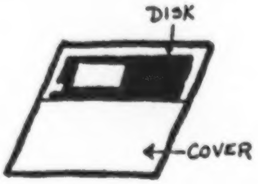
1. Do not touch uncovered surface of the disk.



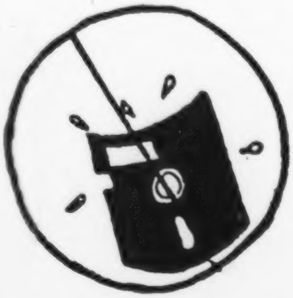
2. No food or drinks around disks.



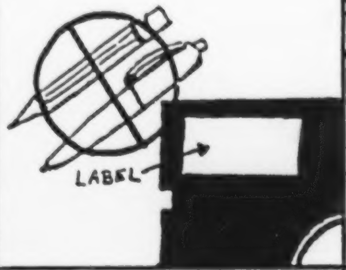
3. Keep disk in the cover when it is not being used.



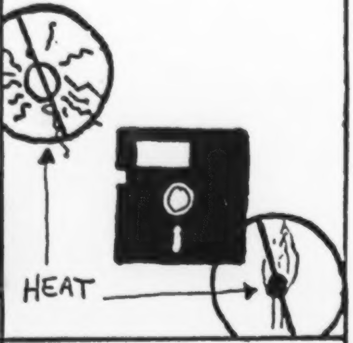
4. Do not bend the disk.



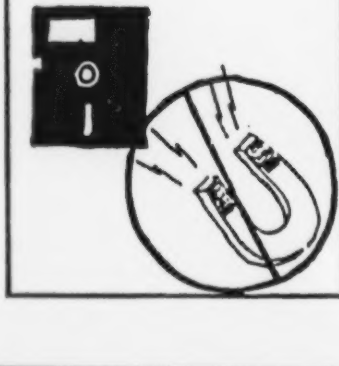
5. Do not write on the disk label with a ball-point pen or pencil.



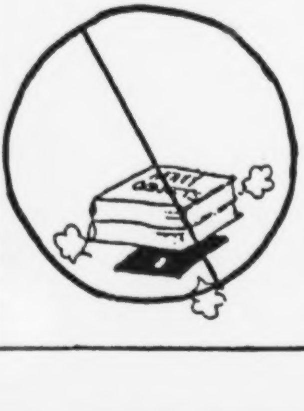
6. Keep disk away from heat.



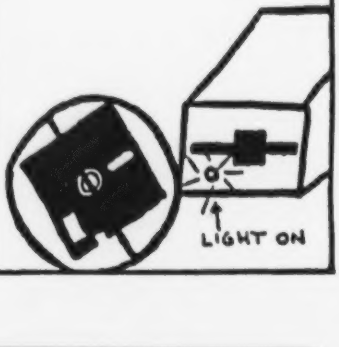
7. Keep the disk away from magnetized objects (magnetic field).



8. Do not place heavy objects on the disk.



9. Do not put the disk in the disk drive when the red light is on.



COMPUTER SCRAPBOOK

CONTRIBUTOR:
Marjorie Tomlinson
Denbigh School
Newport News, VA 23692

Objectives:

- The student will develop an awareness of the wide use of computers in our society.
- The student will increase his/her awareness of computer components and terms.

Procedures:

- Complete a class presentation/discussion of the varied uses of computers in our society and the types of computers. When you feel students have sufficient background, proceed with the computer scrapbook project.
- Distribute the COMPUTER SCRAPBOOK handout to students and explain the project.
- Encourage students to find unusual uses of computers for their scrapbook.

Materials needed:

- Handout: COMPUTER SCRAPBOOK
- Reference books on computers
- Magazines/Newspapers
- Three-ring binder
- Three-hole punch
- Scissors/Glue/Paper
- Photocopier (optional)

COMPUTER SCRAPBOOK

Directions: You are going to prepare a computer scrapbook which will include as many different uses and types of computers as you can find. Be careful! They are all around us! Compile your scrapbook items in a three-ring binder. Number all pages in the lower right corner. Arrange one item per page. Label each page according to the item attached. Computer scrapbook is due ________________.

Magazine pictures

- Personal computer system
- Business computer system
- Pocket size computer
- Computerized robot
- Watch/clock calculator
- Computerized toy
- Home appliance containing a computer
- Joystick
- Mouse
- Light pen

Computer input

- Keyboard (on-line terminal)
- Visual display terminal (VDT)
- Graphic input terminal
- Speech-recognition device
- Floppy disk
- Hard disk
- Flexi- or micro-disk
- UPC label (Universal Product Code)
- Blank or cancelled check (MICR)
- Punch card
- Strip of magnetic tape or tape cartridge
- Library card with a universal code
- Optical character reader (OCR)

Other

- Void credit card or embossed card
- Integrated circuit chip
- Newspaper/magazine article on computers
- Computer cartoon
- Computer sales pamphlet
- Computer program
- Receipt from an automated bank teller

Newspaper classified ads or want ads

- Computer operator
- Computer programmer
- Systems analyst
- Word processing operator
- Data entry operator
- Ad for a used computer
- Ad for computer hardware
- Ad for computer software
- Ad for computer training

Computer output

- Computer-generated photo
- Computer-generated auto analysis
- Computer-generated airline ticket
- Computer-generated grocery tape
- Computer-generated utility bill
- Computer-generated letter
- Computer-generated phone bill
- Computer-generated department store bill
- Computer-generated new car sticker
- Computer-generated label
- Computer microfiche
- Biorhythm
- Plotter drawing

Note: If you think of other items that use computers or are associated with computers, include them in your scrapbook.

Microcomputer Applications/ Information Processing

Category 12

COMPUTERS IN THE WORKPLACE
ORAL AND WRITTEN REPORTS

CONTRIBUTOR:
Lois Alt
D. C. Everest High School
Schofield, WI 54476

Objectives:

- The student will select a computer-related topic, conduct research, and deliver an oral report.
- The student will produce a written report on the same topic using word processing capabilities.
- The student will evaluate the oral reports of other students.

Procedures:

- Provide guideline handouts for the oral and written reports and discuss evaluation criteria.
- Provide selected topics handout and have students identify topics they will research.
- Arrange library access for students to conduct research.
- Approve procedures for research that will be done outside of the school setting; i.e., interview.
- Tape the oral presentations, if video equipment is available, and allow students an opportunity to retape as time premits.
- Provide students with an opportunity to review the peer evaluations as well as the instructor evaluation.
- Evaluate the written reports that were prepared on a word processor.

Materials needed:

- Handouts: COMPUTERS IN THE WORKSPLACE TOPIC IDEAS, EVALUATION SHEET, and STUDENT EVALUATION OF ORAL REPORTS
- Suggested topics and evaluation procedures handouts
- Video taping equipment if available
- Word processing software

COMPUTERS IN THE WORKPLACE PROJECT
TOPIC IDEAS

Each student must choose a different project. In addition to preparing a written report on the word processor, your will give a short oral presentation to the class. The following list is meant to give you ideas but by no means is all inclusive.

1. **COMPUTERS AND SPORTS** - Interview the school athletic director, someone at the YMCA, and at least one other sports-related professional. Find out how computers can be used in fitness testing, statistics.

2. **COMPUTERS IN THE AUTO INDUSTRY** - Interview at least three dealers, mechanics, or others involved in some aspect of the automobile industry. Find out how computers are used to sell and service cars.

3. **HEALTH PROFESSIONS** - Interview physicians and nurses in at least three areas of medicine. Find out how illnesses are diagnosed and treated with the help of the computer.

4. **ACCOUNTING** - Interview three different accountants from different firms. Summarize how they are using computers, how they were trained, kind of software and hardware used, etc.

5. **DESKTOP PUBLISHING** - Create at least three issues of a newsletter on a subject of your choice using desktop publishing software. You should plan to distribute the newsletters to a specific group of people.

6. **JOURNALISM** - Interview someone from the local newspaper(s) to see how they use computers in their operations. Include pictures from your visits if possible.

7. **PRINTERS** - Do a compare/contrast report on printers. Interview at least three businesses to find out what is being used and why. Find out costs, service problems, etc. Arrange for a demonstration of a laser printer.

8. **ROBOTS** - Do a research paper on the use of robotics in manufacturing. Find out if anyone in your area is using robots.

9. **FAMILIES & COMPUTING** - Do a survey of at least 10 families who use computers at home. Include pictures. Make a graph to show which applications are used.

10. **GRAPHICS** - Create a slide show of original artwork using Dazzle Draw or a similar program. Create at least ten screens. Make use of the advanced features of the program.

11. **TYPESETTING** - Interview at least three printshops in your area about the use of computers in typesetting and/or printing.

12. **TELECOMMUNICATIONS** - Research the uses and costs of on-line data base searching. Do a search.

13. **VOICE SYNTHESIZERS** - What are they; who uses them; etc. Arrange for a demonstration.

14. **THE ENTERTAINMENT INDUSTRY** - Radio, TV, movies. What role does the computer play? Interview at least three people in the industry.

15. **APPLICATIONS FOR THE HANDICAPPED** - What can the computer do for people with physical and/or mental handicaps? If possible, interview a handicapped person who uses the computer in some way. Ask him/her to come to class for a demonstration.

16. **AGRICULTURE** - How can farmers make use of the computer. Interview some farmers who are using the computer now.

17. **COMPUTERS IN SPACE** - There is a wealth of information available on computers in the space age. Prepare a report on some aspect of space and computers--space travel, weather predicting by satellite, etc.

18. **YOUR IDEAS** -

COMPUTERS IN THE WORKPLACE
EVALUATION SHEET
55 POSSIBLE POINTS

NAME______________________ TOPIC______________________________________

WRITTEN REPORT - 20 POINTS

Organization - 10 Points
    Introduction
    Information
    Conclusion ________

Mechanics - 10 Points
    Proper vocabulary
    Spelling
    Grammar
    Format ________ ________

ORAL REPORT - 20 POINTS

Appearance - 5 Points
    Businesslike dress
    Neat, clean
    Non-distracting apparel ________

Organization - 10 Points
    Introduction
    Information
    Conclusion ________

Presentation - 5 Points
    Standing up straight
    Enthusiasm
    Loud Enough ________ ________

STUDENT EVALUATIONS - 10 POINTS ________

SELF EVALUATION - 5 POINTS ________

TOTAL POINTS EARNED ________

COMMENTS:

STUDENT EVALUATION OF ORAL REPORTS

1. Who was the presenter and what was the subject of his/her report?

2. How much time would you say the presenter spent on this project? Circle your response.

   A minimal amount of time. A great deal of time. Almost no time at all.

3. Is the presenter dressed in a businesslike manner?

   Yes No

4. Write one question you feel could be asked of anyone who listened to this report to see whether they learned something about this subject. The question may be in any form.

5. You are to assign a point value to this report where 10 is the highest and 0 is the lowest. Based on content, presentation, enthusiasm, etc., how many points would you assign?

   10 9 8 7 6 5 4 3 2 1 0

6. If you could give one helpful hint to this person for future use in giving an oral presentation, what would it be?

COMPONENT/TIME GUIDELINE FOR BUSINESS COMPUTER APPLICATIONS COURSE

CONTRIBUTOR:
Judy Joyce
Red Creek High School
Red Creek, NY 13074

Objectives:

- The student will be provided with a component/time guideline and software and simulation packages used in the Business Computer Applications course.

Procedures:

- Secure needed software packages and simulations.
- Distribute the attached or similar handout: BUSINESS ANALYSIS/BUSINESS COMPUTER APPLICATIONS
- Explain the time framework to the students.
- Progress through the suggested components and follow the suggested timetable as closely as possible.

Materials needed:

- Various word processing software packages and simulations can be used (See attached list.)

Comments:

- An instructor could follow this framework exactly or adapt the materials and/or times to meet individual needs.

- Other software may be substituted if the software packages listed are not used.

- Providing the students with a time framework helps to give them a sense of direction when so many different components have to be introduced in a course.

BUSINESS ANALYSIS/BUSINESS COMPUTER APPLICATIONS

BA Modules	BCA Modules	Time	Software Suggestions
	Computer Systems Applications	1 wk.	PFS: First Choice Demo Disk
Framework of Business		2 wks.	PC-Stock, Bus. Ed. Pkg. (Micro-Learning) Inventory, E-Z Forms
Universal Business Functions		8 wks.	Decide, Decision (Home App.)
Common Business Activities (8 wks.)	Bus. WP App. (4 wks.)	12 wks.	PFS-Write, LearnWare, DisplayWrite 2, Whatsit Corp., Gadgetronics
	Bus. Database App.	3 wks.	PFS-File/Write, LearnWare ERIC Simulation Scholastic's PFS: File Student Activity db "BOOKS"
	Bus. Spreadsheet	4 wks.	E-Z Spread, LearnWare FreeCalc
	Bus. Graphics App.	3 wks.	Draftsman, Poster, Bus. Mgt. Concepts, Demos, NewsRoom
	The Computer, Society and Individual	2 wks.	Game packs, demo disks
Your Place in Business		2 wks.	GIS (Occ. Mod., CDM Mod) - Guidance Department
	Business Operations Overview (Used as Review of Course)	1 wk.	Jeans Factory Simulation
	TOTAL	38 WKS.	

INFORMATION PROCESSING COMPONENTS
A BIRD'S EYE VIEW

CONTRIBUTOR:
Martha C. Yopp
University of Idaho
Moscow, ID 83843

Objectives:

- The student will identify the major components of an integrated word processing system.

Procedures:

- Prepare transparency and/or handout as a class presentation/discussion aid on the importance and scope of each component.

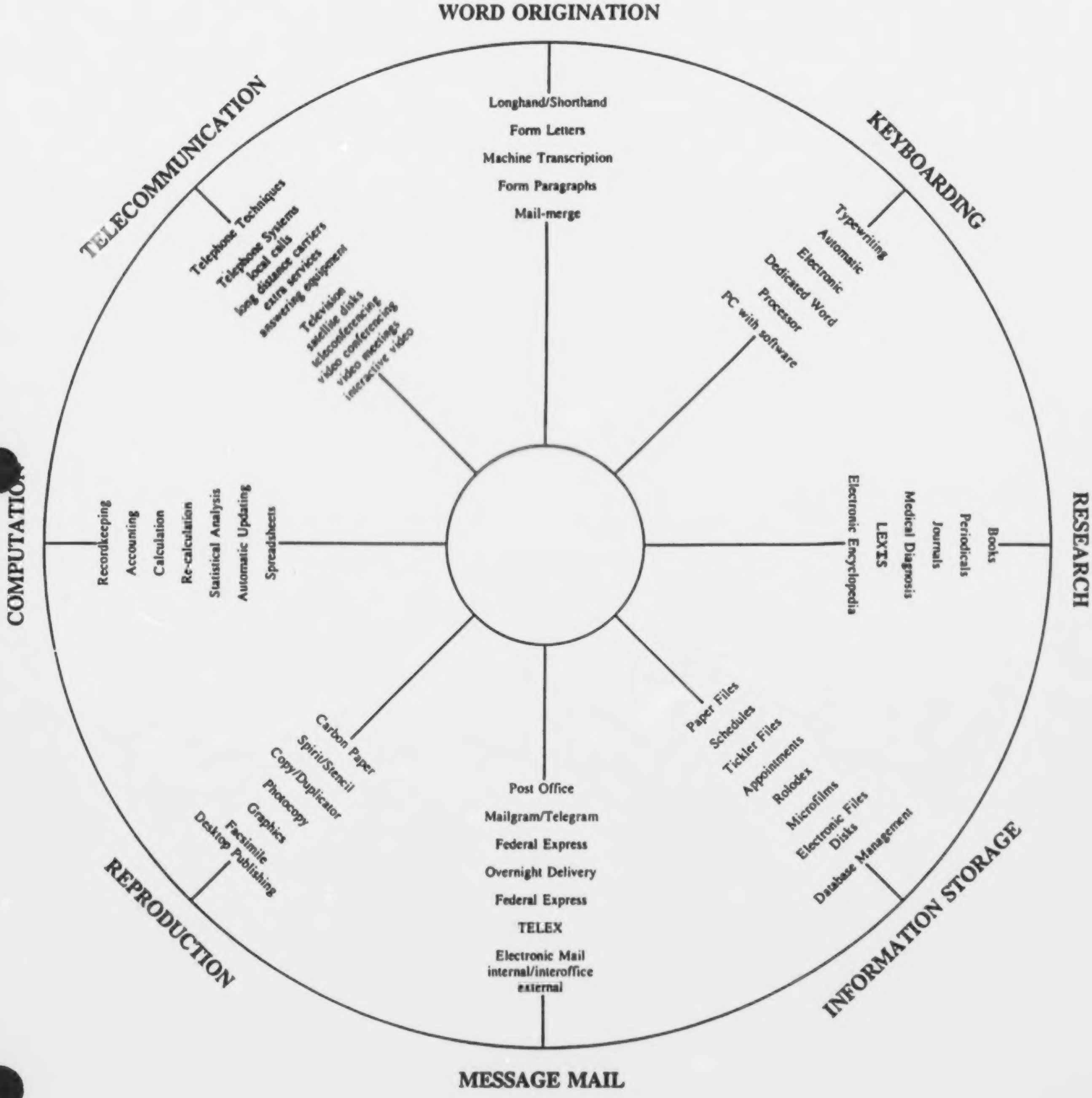
Materials needed:

- Transparency and/or handout: A BIRD'S EYE VIEW OF INTEGRATED INFORMATION PROCESSING
- Overhead projector

Comments:

- This is a good activity to introduce the idea of how components are integrated in the functional word processing system.

A Bird's Eye View
of
Integrated Information Processing


WORD ORIGINATION
Longhand/Shorthand
Form Letters
Machine Transcription
Form Paragraphs
Mail-merge
KEYBOARDING
Typewriting
Automatic
Electronic
Dedicated Word
Processor
PC with software
RESEARCH
Books
Periodicals
Journals
Medical Diagnosis
LEXIS
Electronic Encyclopedia
INFORMATION STORAGE
Paper Files
Schedules
Tickler Files
Appointments
Rolodex
Microfilms
Electronic Files
Disks
Database Management
MESSAGE MAIL
Post Office
Mailgram/Telegram
Federal Express
Overnight Delivery
Federal Express
TELEX
Electronic Mail
internal/interoffice
external
REPRODUCTION
Carbon Paper
Spirit/Stencil
Copy/Duplicator
Photocopy
Graphics
Facsimile
Desktop Publishing
COMPUTATION
Recordkeeping
Accounting
Calculation
Re-calculation
Statistical Analysis
Automatic Updating
Spreadsheets
TELECOMMUNICATION
Telephone Techniques
Telephone Systems
local calls
long distance carriers
extra services
answering equipment
Television
satellite disks
teleconferencing
video conferencing
video meetings
interactive video

Word Processing

Category 12A

WORD PROCESSING--BUSINESS LETTERS

CONTRIBUTOR:
Gail Blair
William Floyd High School
Mastic Beach, NY 11951

Objectives:

- The student will learn how to format business letters using word processing software.
- The student will demonstrate his/her ability to follow written instructions.
- The student will keep a document log.

Procedures:

- Distribute BUSINESS LETTER FORMAT GUIDE Sheet and BUSINESS LETTER JOB Sheet.
- Discuss handouts with students.
- Set a required number of letters to be completed and assign the additional letters as extra credit.

Materials needed:

- Word processing software (WordStar codes shown)
- Word Processing/Computer Equipment
- Modular Typewriting. Amsco School Publications, Inc. or another letter source

Comments:

- The BUSINESS LETTER FORMAT GUIDE and the BUSINESS LETTER JOB Sheet can be adapted easily to different software packages.
- Advanced students could be instructed to hold their documents until completed and turn them in as a packet. Students would be instructed to assemble their documents in the order listed on the BUSINESS LETTER JOB SHEET, placing the BUSINESS LETTER JOB SHEET on top.

BUSINESS LETTER FORMAT GUIDE

Software Code/Notes

__________ 1. Machine Checklist

paper guide at zero
clear margins
single spacing
pitch selector (pica 10, elite 12)

__________ 2. Open/create a file.

Code OJ 3. Set justification off.

__________ 4. Clear tabs.

__________ 5. Set tab at column 30 for the date. (Only set a tab at position/column 6 if you will be indenting paragraphs.)

__________ 6. Key the letter.

__________ 7. PROOFREAD AND CORRECT ALL ERRORS

Code QR 8. Return the cursor to the beginning of the document.

__________ 9. Set margins

Pica 12-77
Elite 20-85

Code B 10. Reformat the document and PROOFREAD.

Code Zero 11. Store the document.

__________ 12. Print (Start printing on line 15 of the paper).

__________ 13. PROOFREAD.

NAME ______________________________

BUSINESS LETTER JOB SHEET

DIRECTIONS:
1) Follow the instructions for the Business Letter Format Guide to format your documents.
2) Key the jobs listed below. (You must submit at least one job at the end of each class period.)
3) Use the current date and your reference initials.
4) Type your name, the job number, and the file name at the top of your document.

JOB	FILE NAME	DATE	TIME STARTED	TIME COMPLETED	TOTAL TIME ON PROJECT
1	GREGG93				
2	MT44				
3	MT45				
4	MT46				
5	MT47				
6	MT48				
7	MT49				
8	MT118 (top letter)				
9	MT120 (top letter)				

WORD PROCESSING--BUSINESS LETTERS

CONTRIBUTOR:
Lynda P. Hawkins
Lake City High School
Lake City, SC 29560

Objectives:

- The student will learn how to format business letters.
- The student will demonstrate the ability to follow written instructions.

Procedures:

- Distribute BUSINESS LETTER JOB SHEET.
- Discuss handout with students.

Materials needed:

- Word processing software
- Word processing/computer equipment

Comments:

- This letter assignment could be adapted easily to different software instructions.
- This would be a good introduction to the formatting of letters. It would also be useful in learning how to make editing changes.

BUSINESS LETTER JOB SHEET

1. "Boot" up your system.
2. Set the default drive.
3. Open a new file named "Test.ShC."
4. Change left margin to column 7.
5. Change right margin to column 57.
6. Turn off justification.
7. Key the following letter exactly as it appears.
8. Key today's date on line 6.
9. Return only at the places shown.

(Today's Date) [RETURN]
    [RETURN]
    [RETURN]
Mr. Charles Gibbs [RETURN]
General Manager [RETURN]
Windsor Corporation [RETURN]
1180 Sherwood Drive [RETURN]
Farmington, NM 87041-2310 [RETURN]
    [RETURN]
Dear Mr. Gibbs: [RETURN]
    [RETURN]
A personal business letter always contains the following parts: date, inside address, salutation, body, complimentary close, originator's name, and originator's street address, city, state, and
ZIP Code. [RETURN]
    [RETURN]
This personal business letter has been typed in the block format. In the block format, all parts begin at the left margin. This format is easy to type since it requires no tab stops. [RETURN]
    [RETURN]
Sincerely, [RETURN]
    [RETURN]
    [RETURN]
(Your Name)
(Your Street Address)
(Your City, State, and ZIP)
    [RETURN]

10. Print your file.
11. In line three of the first paragraph above, change the word originator's to author's (both times).
12. Turn on justification.
13. Reformat both paragraphs.
14. One blank line below your city, state, and ZIP, add this: "P.S. Most businesses use block format since it is the fastest method for the typist." [RETURN]
15. Reformat the document.
16. Save your file.
17. Print your file.

WORD PROCESSING–GENERAL EDITING OF DOCUMENTS

CONTRIBUTOR:
William F. Kaeding
Benton Harbor High School
Benton Harbor, MI 49022

Objectives:

- The student will key a document using a microcomputer and will use the document to improve editing and proofreading abilities.

Procedures:

- Give the document containing errors to the students to key (WORD PROCESSING ASSIGNMENT I). Instruct the students to use software defaults and to key the document exactly as given--including spacing and format errors.
- Print a hard copy of the error-filled document.
- Make the changes given in WORD PROCESSING ASSIGNMENT II including: correction of spelling errors; improvements in margin and spacing format; and variations in format--such as underline, boldface, justification of margins, and headers/footers.
- Print a hard copy of the corrected final document.

Materials needed:

- Handouts: WORD PROCESSING ASSIGNMENT I and WORD PROCESSING ASSIGNMENT II
- Any software that is capable of the following: right margin justification; underline; boldface; variable spacing within document; headers/footers; block movement.

Comments:

- This activity would be appropriate after the students have learned how to perform the editing functions of the software program in use.
- Variations: This activity is appropriate to help teach editing skills. The teacher could key and save the error-filled document and have the students retrieve the file and make corrections. In this way, students would learn the commands and keys needed to make changes that are most often required in editing documents.

WORD PROCESSING ASSIGNMENT I

Directions: Enter in the following text using your word processing software program. Type the document exactly using the word processing software defaults. Do not change spacing errors, spelling errors, etc. Use the software function to save your document. Then print a hard copy of your document.

Random Access Memory

Random Access Memory, or RAM, can be thought of as an emptyu box, ready to hold information that you type or load into the computer. RAM is the memory where your programs are stored. Unlike your memory, Fandom Access Memory never forgets the information it is storing, as long as the computer is turned on.

RAM is temporory memory. This means you can make changes in the information that gets stored in RAM. This alows you to use a compter for many diferent jobs.

Because RAM is a tempporary memory, all the information stored in RAM is lost or erased every timeyou turn the computer off. This is why we have perpheral input and output devces. If you did, your program stored in RAM would be lost. Instead, you would save your program on a disk or tape. When you wanted to use your program again, you would load the program from the disk or tape into the computer's RAM.

Read Only Memory

ROM, or Read Only Memory, is the computer's other kind of memory. ROM stores programs that the computer needs in order to operate. Those programs are built into ROM whenthe computer is asembled at the factory. ROM is a permanent memory because its programs are always in the memory, whether the computer is turned on or off. You cannot make changes in the programs in ROM.

RAM and ROM

Computers need both kinds of memory, RAM and ROM, to function properly. ROM stores the permanent instructions to the computer. RAM stores the programs and data you enter into the computer.

WORD PROCESSING ASSIGNMENT II

Directions: Make the following changes to the text you just typed. Remember to print a hard copy of the document before you make the changes and another hard copy after you make the changes. Turn in both hard copies.

1. Change side margins to 1 1/2 inches and top margin to 10.
2. Move the last title and paragraph to the beginning of the document.
3. Type your name, the date, and the hour in the upper right hand corner so that there are three blank lines before the first title.
4. Your name, the date, and the hour should be right justified.
5. Change the titles to all capital letters, centered, and in bold print.
6. Underline all the terms RAM and ROM in the document except for those in the titles.
7. Indent the paragraphs five spaces.
8. Triple space before and double space after the titles.
9. Add the footing COMPUTER LITERACY.
10. Check the spelling and make all necessary changes.

WORD PROCESSING--TEN LETTERS TO CELEBRITIES (MAIL MERGE PROJECT)

CONTRIBUTOR:
Patti Lane
Carol Young
Rowland High School
Rowland Heights, CA 91748

Objectives:

- The student will learn the mail merge function of word processing software.
- The student will keyboard the letter in block style and mixed punctuation.
- The student will make corrections, as indicated, using software features and functions.

Procedures:

- Distribute copies of the procedures handout, letter, and addresses to class.
- Review procedures for using your specific software at the appropriate steps in the procedure.

Materials needed:

- A microcomputer and printer
- Word processing software with merge capability
- Sample letterhead and envelope

Comments:

- Not only can this activity be used to review inserting variables into a letter, it can also be used to reinforce letter styles and to develop editing skills.
- The student could set up a data base containing the names and address and use the merge command to prepare the document.

PROCEDURES FOR LETTERS TO CELEBRITIES

Your boss wants 10 of these letters sent out. Each one will be sent to a different consumer, so you will be personalizing each letter. As you key the letter, use the merge variable option each time you see parentheses within the body of the letter. Be sure to leave a merge variable option for the letter address.

Key the letter exactly as shown (including errors). Use the software defaults and prepare a block style letter with mixed punctuation. Leave four lines for the letter address. (At least one letter address will contain four lines.)

Type in the current date and include your initials at the bottom of the letter.

Save your document and print a hard copy of the letter.

On your hard copy, make the following corrections using correct proofreader's marks. Proofread the entire letter for additional errors.

-- In the first paragraph, the word receive is spelled incorrectly. Correct this spelling error.

-- In the second paragraph, delete the "and" between extremely and charming. Change "a very good" to "an excellent."

-- In paragraph three, aspects is spelled incorrectly. Correct it.

-- The book in paragraph three should be underlined instead of enclosed in quotation marks. Remember to remove the quotation marks and use the underline function.

-- Delete the comma after the dictator's name and move "Public" to the following line.

Change the top margin setting to 2.5 inches. Change the left and right margins to 1.5 inches. Change your letter style to modified block.

Proof and save your letter. Now you are ready to print your letter, addressing one letter to each name on your address sheet. Naturally, the salutation will conform to the name in the address.

Prepare envelopes for each letter.

Directions: Key this letter as is (including errors) using the software defaults. Save your document. Print a hard copy. Correct your hard copy using proofreader's marks. Using your corrected copy as a guide, change your computer (soft) copy following the directions on your procedure sheet.

Current Date

( )
( )
( )

Dear ( )

Under separate mailing you will recieve a picture of ( ) as you requested and a list of her many books.

Most students, I believe, will find her picture ravishing and extremely and charming. However, for those students who do not agree with ( ) rules, her picture would make a very good dart board.

As you know, ( ) specializes in books relating to all aspets of business and classroom rules. Your personalized list of these titles and an order form are enclosed. I invite your examination of this list. A ten-day free trial copy of her latest book, "Ten Reasons Not to Chew Gum In Typing," is yours for the asking.

You have always been our favorite customer and I am looking forward to hearing from you soon.

Sincerely yours,

Mr. James Cappuccilli, Public
Relations Director

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Enclosures

SAMPLE OF CORRECTED LETTER

March 11, 1986

Mr. Billy Joel
6849 Dover Street
Carmel, CA 93620

Dear Mr. Joel:

Under separate mailing you will receive a picture of Mrs. Young as you requested and a list of her many books.

Most students, I believe, will find her picture ravishing and extremely charming. However, for those students who do not agree with Mrs. Young's rules, her picture would make an excellent dart board.

As you know, Mrs. Young specializes in books relating to all aspects of business and classroom rules. Your personalized list of these titles and an order form are enclosed. I invite your examination of this list. A ten-day free trial copy of her latest book, Ten Reasons Not to Chew Gum in Typing, is yours for the asking.

You have always been our favorite customer and I am looking forward to hearing from you soon.

Sincerely yours,

Mr. James Cappuccilli
Public Relations Director

yi

Enclosures

ADDRESSES

Mr. Billy Joel
6849 Dover Street
Carmel, CA 93620

Mr. Phil Collins
3942 Main Street
Burbank, CA 92693

Ms. Cindy Lauper
3090 Red Hair Lane
Malibu, CA 94638

Mr. Lionel Ritchie
26940 West Soul
Los Angeles, CA 93468

Mr. Jack Ritter
320 Hollywood Avenue
Hollywood, CA 91700

Miss Cybil Shepard
8525 Moonlighting Lane
New York, NY 74420

Miss Linda Evans
432 Dynasty
Aspen, CA 62913

Mr. Michael J. Fox
4321 Back To The Future
Fox Hills, CA 91762

Mrs. Tina Turner
525 Singer Lane
Beverly Hills, CA 91764

Mr. Tom Sellick
NBC Studios
210 Vine Avenue
Hollywood, CA 91700

WORD PROCESSING--TABULATION

CONTRIBUTOR:
Kathy Olson
Arlington High School
Riverside, CA 92503

Objectives:

- The student will learn how to set up tabulated work using AppleWriter.

Procedures:

- Distribute the handout containing the instructions on setting up tabulated material.
- Provide students with a sample tabulation problem. Have students key the tabulation problem following the guidelines given in the table tips.

Materials needed:

- Handout: TABLE TIPS USING APPLEWRITER
- AppleWriter word processing program
- Microcomputer and printer

Comments:

- This idea is for the older version of AppleWriter. Most current word processing packages/programs (such as AppleWorks) do not require the explicit printer commands AppleWriter does.
- This idea could be used to reinforce or introduce the concept of vertical and horizontal centering prior to using automated centering procedures.
- The basic idea can be translated to the commands of a specific word processing program. Students will need to adjust for the defaults of specific word processing software programs and classroom printers.

TABLE TIPS
USING
APPLEWRITER

1. CLEAR MARGINS

   .lm0
   .rm80

2. CLEAR TABS

   [T]:p

3. FIND STARTING LINE

   Use HUSH formula

4. CENTER AND TYPE TITLE

   .cj
   TITLE
   (triple space)
   .lj

5. MOVE CURSOR TO CENTER (40)

6. SET "LEFT MARGIN"

   Backspace once for every two characters in the longest line of each column and for the spaces between each column. Set a tab ([T]:s).

7. SET TABS FOR COLUMNS

   Space forward once for every character in the longest line of the first column and for the spaces between the first and second columns. Set a tab ([T]:s). Set additional tabs for the remaining columns in the same way.

8. TYPE COLUMNS

   Use delete key to backspace to the first column position; then begin typing.

WORD PROCESSING--REPORT PREPARATION

CONTRIBUTOR:
Nan Shapiro
La Serna High School
Whittier, CA 90605

Objectives:

- The student will input information containing indented numbered items in a report format.

Procedures:

- Distribute the instruction handout and review specific software commands/procedures with the students.

- Have students prepare the document on setting up letters following written instructions.

Materials needed:

- Word processing program

- Microcomputer with printer

- Handout: REPORT PREPARATION INSTRUCTIONS

Comments:

- This activity encourages the students to follow written directions as well as to input and edit text.

REPORT PREPARATION INSTRUCTIONS

Using your word processing software package, follow the instructions (numbered 1 - 11) below to produce a printed copy of the WORD PROCESSING PRACTICAL REPORT below.

1. Boot the program and create a new file. Call it ____________________.
2. Set a top margin for 1 inch.
3. Type your name in **BOLD** print at the top right corner then triple space.
4. Center the title in all caps (using the correct commands) and triple space.
5. Justify your margins, indent the first line of the paragraph five spaces, and type the report double-spaced.
6. Double space after the first paragraph and change the left and right margins to 1.5 inches.
7. Type the numbered items single-spaced and double space between each item. Set an indent command so that the numbered items are in a block.
8. Print a copy of the report. NOTE: Make sure your printer is set up before you begin printing.
9. Proofread your copy and make any needed corrections.
10. Print a final copy and, if possible, a hard copy showing your print options at the beginning of the file.
11. When you are done, staple your papers together with your finished copy on top, and your hard copy with print options next.

****

WORD PROCESSING PRACTICAL REPORT

Personal and Personal-Business Letters

Personal as well as personal-business letters are often typed. Some people use special-size stationery; others use standard-size stationery. Most people use a letter style known as modified block for such letters.

Features of modified block style include:

1. The return address and the date begin at the horizontal center point of the stationery.
2. The letter address, the salutation, and every line of the paragraphs begin at the left margin.
3. The complimentary close and the typed name of the writer (if one is used) begin at the horizontal center point of the stationery.

THE HOLIDAY SHOPPE (WORD PROCESSING--LETTERS)

CONTRIBUTOR:
Faye Turbeville
Horry County School
Myrtle Beach, SC 29577

Objectives:

- The student will process "actual" letters as opposed to "simulated" letters.
- The student will perform tasks in a centralized word processing environment.
- The student will be able to delineate the job responsibilities and duties of correspondence secretaries, administrative secretaries, word processing supervisors, and word processing managers.
- The student will experience the necessity of office employees working as a team.
- The student will participate in establishing work flow within a word processing center.
- The student will experience the relationship between productivity and document turnaround.
- The student will accept responsibility for the creation of error-free, timely documents.
- The student will help promote better public relations between the school system and the school communities.

Procedures:

- In your word processing class, explore the subjects of:

  (a) letter composition
  (b) envelope formatting
  (c) centralized word processing centers
  (d) duties and responsibilities of word processing workers
  (e) teamwork in word processing centers
  (f) word processing employee morale
  (g) word processing center chain of command
  (h) letterhead creation
  (i) problems that arise in word processing centers

- Transform the word processing class into a centralized word processing center for Santa Claus. Students will serve as Santa's elves and will process all letters received. Students should select their individual elf names and use these names on all correspondence with the children.

- Advertise, via local television, radio, and newspapers, for children to send letters to Santa Claus addressed to your school.
- Appoint a word processing supervisor (one of the students) to oversee the work and plan the work flow.
- In December, appear on television with a representative from the word processing class to explain The Holiday Shoppe.
- From December 1 through December 18, answer all letters on an individualized basis that are mailed to The Holiday Shoppe.
- In December, sponsor an Open House at which time Board of Education members, Advisory Board members, parents, and news media will be invited in for a demonstration of the activities connected with The Holiday Shoppe.
- In January, publish a report that shows the number of letters received (and answered) with a breakdown of communities represented.

Materials needed:

- Approval from and support of Board of Education members, superintendent, and principal, president, director, etc.
- Financing of postage for letters to be mailed out (could run anywhere from $25 to $100)
- Financing of twenty-pound bond colored paper to be used in the creation of letterhead (approximately $10)
- Word processing software
- Production log sheets

Comments:

- POSSIBLE POSITIVE OUTCOMES:

  Better student self-concepts and increased job opportunities from businesses
  Better student/student and student/teacher relationships
  Increased enrollment in word processing classes
  Better image for vocational education

- POSSIBLE NEGATIVE OUTCOMES:

Destructive public image for your school if all letters are not answered or if letters are answered sloppily or incorrectly

Loss of teaching time if the program is not carried out correctly

Total student involvement and enthusiasm for the program could affect their involvement in other subjects

- ADDITIONAL COMMENT:

This is a very innovative idea to help students gain "real life" experience in the writing, inputting, and outputting of letters. There is much preparation time by the teacher. The outcomes are positive--students will see immediate results. Good community/public relations will develop if the project is well organized.

SAMPLE
PRODUCTION LOG SHEET

Date: From ___________ To ___________

Job No.	Santa's Elf	Originator	Date/ Time In	Date/ Time Out	Total Lines
1	Ice Icicle	Aaron Berry	11-30	12-1	29
2	Frosty	Amos Berry	11-30	12-1	31
3	Snowflake	R. Richardson	11-30	12-1	33
23	Dancer	C. Bellamy	11-30	12-2	27
24	Frosty	A. Marlowe	11-30	12-1	32
25	Ice Icicle	S. Johnson	11-30	12-1	32

Spreadsheets

Category 12B

SPREADSHEET TERMINOLOGY QUIZ

CONTRIBUTOR:
LeRoy Benson
Williston High School
Williston, ND 58801

Objectives:

- The student will identify the indicated spreadsheet items by writing its identifying number beside the letter describing the function or item.

Procedures:

- Use the SPREADSHEET TERMINOLOGY QUIZ as a reinforcement problem after identifying and explaining the basic components of a spreadsheet program.

Materials needed:

- Pencil
- Handout: SPREADSHEET TERMINOLOGY QUIZ

Comments:

- Instead of this example, the teacher could do a screen dump of a specific spreadsheet that is actually being used in school and add numbers to it.

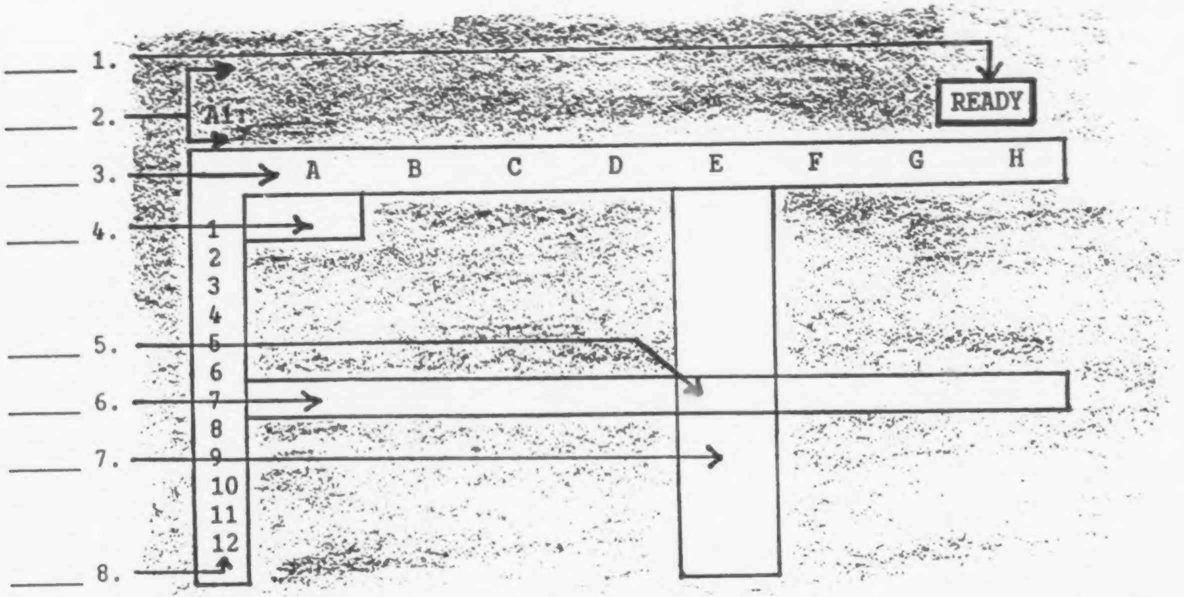
Key:

1. K
2. F, G, J
3. E
4. C
5. B
6. L
7. D
8. M

NAME ____________________

SPREADSHEET TERMINOLOGY QUIZ

Directions: Write the letter of the term or terms which best fit the part of the spreadsheet being pointed to in the blank alongside the number. Some parts of the spreadsheet may have more than one term correctly fitting them.



A. Backspace Key
B. Cell
C. Cell Pointer
D. Column
E. Column Border
F. Control Panel
G. Edit Line
H. Escape Key
I. Label
J. Location Indicator
K. Mode Cell
L. Row
M. Row Border
N. Value

SETTING UP A PAYROLL REPORT USING SPREADSHEET SOFTWARE

CONTRIBUTOR:
Judy Joyce
Red Creek High School
Red Creek, NY 13074

Objectives:

- The student will use a spreadsheet software program to prepare a report projecting annual payroll based on hourly wage data for a small company.

Procedures:

- Use any spreadsheet program to set up a model similar to the PAYROLL SPREADSHEET. Key the data for Employee Number, Years Employed, and Hourly Wage.
- Develop appropriate formulas to make the payroll calculations in the Weekly Salary, Monthly Salary, and Yearly Salary columns for Employee 115.
- Replicate the formulas down the columns for each employee.

Materials needed:

- Handout: SPREADSHEET WORKSHEET
- Any spreadsheet software program
- Computer capable of running the spreadsheet program

Comments:

- After this initial problem is completed, other columns could be included to deal with withholdings, taxes, etc.
- The teacher can use the "extra" data in the spreadsheet to extend the problem. For example:

  Management is considering giving employees a Christmas bonus based upon the years of employment with the company. How much will it cost the company if it gives a bonus of $50 for each employment year? Produce a printout showing the bonus for each employee and the total cost to the company.

Terminology:

- Replicate--A procedure used in spreadsheets that allows a formula to be copied to other cells and adjusted for its new position relative to the original formula.

PAYROLL SPREADSHEET

1. You are to develop a spreadsheet. Title it: BA/BCA Corporation
Red Creek, NY
Employee Salaries

2. Use the following information to develop the body of your spreadsheet:

Emp. No.	Years Employed	Hourly Wage	Weekly Salary	Monthly Salary	Hourly Salary
115	3	$4.15			
117	1	3.80			
101	10	5.80			
109	4	4.25			
113	1	4.10			
114	2	3.85			

3. Input formulas and calculate salaries based on the following to complete the other columns of your spreadsheet:

40 hours = 1 week
4 weeks = 1 month
50 weeks = 1 year

4. Produce a printout that contains the total paid for weekly, monthly, and yearly salaries for each employee.

SPREADSHEET--RUN FOR LIFE

CONTRIBUTOR:
Valerie A. Napieralski
Macomber-Whitney VoTech HS
Toledo, OH 43624

Objectives:

- The student will design a spreadsheet and use the "what if" spreadsheet analysis.

Procedures:

- Give the students the two handouts: RUN FOR YOUR LIFE and LAST YEAR'S RUN FOR YOUR LIFE. Following the procedures listed on the RUN FOR YOUR LIFE sheet, the students produce two reports: a printout of last year's results, and a printout of "what-if" results.

Materials needed:

- Handouts: RUN FOR YOUR LIFE and LAST YEAR'S RUN FOR YOUR LIFE
- Computer and spreadsheet package

Comments:

- The project allows students to discuss strategies and manipulate alternatives on a subject familiar to many students: a 10K charity run. Upon completion of the project, the student is aware of the spreadsheet "what-if" analysis capabilities.

****

TEACHER'S "WHAT-IF" SAMPLE KEY

	Age 35 & Over		Age 18 - 34		Under 18		
	Men	Women	Men	Women	Boys	Girls	Total
Race Entries	148	65	538	264	64	162	1241
Entry Fees	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Total Fees	888.00	390.00	3228.00	1584.00	384.00	972.00	7446.00
Race Expenses							
1st Prize	10.00	10.00	10.00	10.00	10.00	10.00	60.00
2nd Prize	5.00	5.00	5.00	5.00	5.00	5.00	30.00
3rd Prize	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T-Shirts	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Total T-Shirt Cost	222.00	97.50	807.00	396.00	96.00	243.00	1861.50
Advertising	16.66	16.67	16.66	16.67	16.67	16.67	100.00
Total Expenses	253.66	129.17	838.66	427.67	127.67	274.67	2051.50
PROFIT	634.34	260.83	2389.34	1156.33	256.33	697.33	5394.50

RUN FOR YOUR LIFE

You work for the Lung Association which is sponsoring the "Run for Life"--a 10K run to begin at Toledo Hospital and end at the Hotel Sofitel. The race this year is October 1 and entrants must have fees returned by August 31. There has been much discussion about how much to charge for an entry fee. Our goal this year is to make $5,000 profit. Will it be possible? What do we need to charge to make this possible? Consider all race expenses.

Last year, each entrant was given a T-shirt commemorating the event. Each T-shirt cost us $2. Prizes were given for the fastest times for both men and women in each category. First prize winners in each category received $50, second prize winners received $20 each, and third prize winners received $10 each. The categories and the numbers of entrants (in parentheses) by category in last year's race are given below:

Women: age 35 and over	(65)
Men: age 35 and over	(148)
Women: age 18 - 34	(264)
Men: age 18 - 34	(538)
Girls: under 18	(162)
Boys: under 18	(64)

What you are to do:

Printout 1:

Make a spreadsheet showing last year's results by category: the entrants, the fees charged, and the total fees collected. Deduct from a grand total, the total expenses for the race. Use LAST YEAR'S RUN FOR YOUR LIFE as your guide.

Printout 2:

Make a spreadsheet using "what if" analysis with the cost of the entry fees and expenses. The advertising cost is to be spread among all categories. What will it take in order to make $5,000 in profit for the Lung Association?

Here are some ideas for your "what if" analysis:

1. Increase entry fees to $6 per person.
2. Eliminate 3rd prize completely.
3. Provide trophies instead of cash prizes to 1st and 2nd place winners. Trophies can be purchased for as little as $5 apiece for the 2nd prize winners. A nicer trophy can be purchased for $10 for the 1st prize winner.
4. Seek out another source for t-shirts. Try to reduce price to $1.50.
5. Use as many free sources for advertising as possible. Reduce newspaper ad to $100.
6. Publicize as much as possible--try to increase number of runners over last year.

LAST YEAR'S RUN FOR YOUR LIFE

	Age 35 & Over		Age 18 - 34		Under 18		
	Men	Women	Men	Women	Boys	Girls	Total
Race Entries	148	65	538	264	64	162	1241
Entry Fees	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Total Fees	740.00	325.00	2690.00	1320.00	320.00	810.00	6205.00
Race Expenses							
1st Prize	50.00	50.00	50.00	50.00	50.00	50.00	300.00
2nd Prize	20.00	20.00	20.00	20.00	20.00	20.00	120.00
3rd Prize	10.00	10.00	10.00	10.00	10.00	10.00	60.00
T-Shirts	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Total T-Shirt Cost	296.00	130.00	1076.00	528.00	128.00	324.00	2482.00
Advertising	33.34	33.33	33.33	33.33	33.33	33.34	200.00
Total Expenses	409.34	243.33	1189.33	641.33	241.33	437.34	3162.00
PROFIT	330.66	81.67	1500.67	678.67	78.67	372.66	3043.00

SPREADSHEETS–PAYROLL

CONTRIBUTOR:
Kenneth Reynolds
Rowan State Vo-Tech School
Morehead, KY 40351

Objectives:

- The student will reinforce his/her use of a spreadsheet.

Procedures:

- Distribute the handout PREPARING A PAYROLL SPREADSHEET. Discuss the problem with your students and answer their questions. Help students on an individual basis as needed.

Materials needed:

- Handout: PREPARING A PAYROLL SPREADSHEET
- A software package that allows one to prepare a spreadsheet
- Documentation on the use of the software package

Comments:

- After your students have studied spreadsheets and prepared several textbook exercises, this problem can be used to provide a realistic business activity for your students to solve.
- The WorkSheet feature of the DeskMate II software package was used for this activity, but it can be used with other spreadsheet/worksheet packages.
- The documentation which comes with DeskMate II is a good source to use with this exercise.
- If the teacher "walks through" the problem with the students, the exercise can be a good review of the procedures used to develop a spreadsheet. The teacher will need to provide additional information on taxes.

PREPARING A PAYROLL SPREADSHEET

- Bring up spreadsheet software. When it asks for filename, enter PAYROLL.
- With the entry marker in R1 C1, you will begin to place column headings on your worksheet. You will begin in R1 C1 and go through R1 C16.

HEADINGS: Last Name, First Name, Employee No., Reg. Hours, Reg. Rate, Reg. Pay, OT Hours, OT Rate, OT Pay, Gross Pay, Emp. Inc. Tax, FICA Tax, State Tax, Local Tax, Total Deduc., and Net Pay.

- After you have entered column headings, you need to format the column headings width.
- CHANGE column width for the Last Name to 20, First Name to 15, Emp. Inc. Tax to 12, Total Deduc. to 12, and Employee No. to 15.
- NEXT, right justify the column headings.

CODES:
L = left-justified
R = right-justified
D = decimal (up to seven decimal places)
I = integer (whole number)
$ = dollar format (two digits after the decimal)

- Beginning in R2 C1, enter last names of your employees.

EMPLOYEES: (hourly rate and overtime hours in parentheses)

Adkins, Margaret	($ 7.50)	(6)	Barnett, Gervel	($ 8.75)	(8)
Bell, Kendra	($ 7.50)	(3)	Harmon, Paulynette	($ 5.00)	(3)
Hinton, Sherry	($10.00)	(12)	Horsley, Teresa	($ 5.00)	(4)
Howard, Nancy	($ 7.50)	(6)	Mills, Heidi	($10.00)	(12)
Nickell, Sherry	($12.00)	(9)	Pettit, Vergie	($ 8.75)	(4)
Price, Gaylena	($15.00)	(15)			

- All employees work 40 hours per week.
- OVERTIME is paid at time and a half.

FORMULAS

Use formulas to compute different amounts within your worksheet. Remember: You can use formulas within rows or columns.

Examples:			
	+	C4+C5	Adds columns 4 and 5 together
	-	C4-C5	Subtracts column 5 from 4
	*	C4*C5	Multiplies column 4 by column 5
	/	C4/C5	Divides column 4 by column 5
	SUM(R1)		Gives you total of row 1

Data Base

Category 12C

DATA BASE/WORD PROCESSING--VACATION SIMULATION

CONTRIBUTOR:
Loretta Barker
Fontana High School
Fontana, CA 92335

Objectives:

- The student will gain experience using a data base software program in conjunction with a word processing system program to determine a vacation schedule for employers and to prepare the related correspondence.

Procedures:

- Distribute the assignment sheets to the students.
- Discuss the simulation with the students and answer their questions regarding the project.
- Provide reference manuals for the software programs and have the students check their reference materials to determine if they can find the answer to their questions before they ask you for assistance.
- Instruct students that they are to work as independently as they can but that you will be available to assist if they have difficulty.

Materials needed:

- Handouts: VACATION SCHEDULING
  DATA BASE ACTIVITY
  WORD PROCESSING ACTIVITY
  MERGING THE DATA BASE WITH WORD PROCESSING
  COMPLETING THIS PROJECT
  SUGGESTED TEACHER KEYS
- Data base and word processing software. (NOTE: Instructions shown are for AppleWorks.)

Comments:

- In this project the students use a data base program to input information regarding employees' requested vacation dates. Students prepare an interoffice memorandum form which can be used for all departments as needed. To complete the project, students pull up the vacation information by department, and use that information to prepare memos to send to each department head.
- The vacation simulation can be used with other computers and other software by making changes in the instructions.

VACATION SCHEDULING
Allied Metals, Inc.
Industrial Relations Department

GOOD MORNING! Welcome to Allied Metals, Inc. and to the Industrial Relations Department. I'm sure you're going to enjoy working here.

Mr. Smith, your supervisor, has been called to a meeting this morning. He asked me to greet you, to show you your work area, and to get you started on the project he left for you.

Many of our employees have already requested vacation dates for this summer, and Mr. Smith wants to get this information out to the department heads as soon as possible. Since you are well acquainted with the Apple Works program, particularly word processing and data base, Mr. Smith wants you to begin working on this project while he is in his meeting.

Basically, you will develop a data base and input the information regarding the employees and their requested vacation dates into that data base. Next, you will prepare an inter-office memorandum form which you can use for all departments. Lastly, you will pull up vacation information by department, put that information into the memo format, and prepare memos to send to each of our department heads.

Now that I've explained the project to you, please start by creating the data base. If you have any questions, check your reference materials and manuals. If you cannot find the answer to the question, you may check with me.

I'll let you know when it's time for lunch, and we can talk about how you're doing on this project.

See you later---

DATA BASE ACTIVITY

1. Create a data base with the following categories:
   Name
   Employee No.
   Department
   Vacation Dates
   Weeks
   REMEMBER: @ Y gets rid of the word "category."
   Title this "Vacations." ESC when categories are complete.
2. Input the following information (do not type in the word "weeks" from the last column as you complete each label).

Lavon Sells	12456	Sales	June 23	2 weeks
Loretta Zimmer	21429	Engineering	August 11	2 weeks
Pat Timmons	11624	Engineering	July 14	1 week
Harold Wilson	23718	Manufacturing	June 30	2 weeks
Brian Martin	19642	Purchasing	August 18	2 weeks
Fred Clark	22816	Sales	July 21	3 weeks
Carole Henderson	12403	Manufacturing	July 7	1 weeks
Russell Parks	22123	Manufacturing	August 5	2 weeks
John Wesley	21736	Purchasing	August 18	2 weeks
Alice Ivey	25001	Sales	June 30	1 week
Rosemae Perry	17628	Engineering	August 25	1 week
William Briles	15604	Engineering	July 21	2 weeks
Terri Jones	27611	Manufacturing	September 8	3 weeks
Hugh Smith	24242	Purchasing	July 28	2 weeks
Jack Allen	12273	Purchasing	August 11	2 weeks

3. View the records in Multiple-Record Layout (@ Z). Check your records to make sure all information is correct. If you find that you have made an error, correct it by using the Overtype Function (@ E) and typing over the error.
4. Save the data (@ S).
5. Prepare a Report Format (@ P). Choose Create a Table Format, title it "VAC XX" -- use current dates.
   a. Adjust the width of each column to give the report a pleasing appearance, making sure that the longest item in each column will fit in the column. Total width of activity should be approximately 72 spaces.
   b. Change margins to allow for 1" side margins (right and left).
   c. Change characters per inch to 12 (@ O, CI 12 = 72 characters available). ESC to get back to Report Format.
   d. Arrange this list chronologically by vacation dates (@ A when the cursor is on the title of Vacation Dates column).
   e. Save this report format (@ S) and ESC to get back to report format.
6. Print the report (@ P). Use the current date.
7. ESC to Main Menu.

WORD PROCESSING ACTIVITY

1. Set up a new file for the Word Processor. Title it VAC MEMO.

2. Set up an Inter-Office Memorandum, use standard format of 1" side and top margins. Remember, you work for ALLIED METALS, INC. You will print on plain paper.

3. Center the company name (@ O, CN), and use 6 characters per inch, (@ O, CI 6). Center "Inter-Office Memorandum" a single space below the company name.

4. Return your memo to unjustified format (@ O, UJ) and return characters per inch to 10 (@ C1, 10).

5. Leave the "TO" and "DATE" lines blank as you will be using this memorandum for more than one person.

6. Input the following using correct spacing:

   TO:
   FROM: Russell Smith, Director, Industrial Relations
   DATE:
   SUBJECT: Vacations 19XX
   Listed below are the employees who have applied for vacations during the months of June, July, August, and September of 19XX.
   Please review these scheduled vacations to be sure they do not conflict with any department scheduling. Any conflict of vacation dates for employees in your department is to be handled within the department.

7. Save this memo format.

8. Print a copy of this memo format.

MERGING THE DATA BASE WITH WORD PROCESSING

1. Be sure both documents are on the Desktop. (@ Q will show you what is on your Desktop.)
2. Get the data base file on the screen.
3. @ P - get a report format (Vac XX). Delete the Department column. Adjust the columns to fit evenly within the 1" side margins, changing characters per inch (CI) to 10 (you will have 60 characters available).
4. Separate the records for the Purchasing Department (@ R). Select Department (return) and contains (return) and type in Purchasing (return), ESC.
5. Print this table TO THE CLIPBOARD (@ P).
6. Pull up the Vacation Memo (@ Q).
   Insert the current date and address the memo to William Hauser, Director, Purchasing.
7. Place your cursor at the bottom of the memo where you wish to insert the table.
8. Move the table FROM THE CLIPBOARD (@ M). Delete the first three lines at the top of the table, which are not needed for this memo.
9. Put your initials at the bottom of the memo as the reference initials.
10. Print the memo.
11. Return to Data Base (@ Q).
12. Select @ P and select Get a Report Format (VAC XX).
13. Separate the records for the Sales Department (Q R). See No. 4 above.
14. Print this table TO THE CLIPBOARD (@ P).
15. Delete the previous addressee's name (@ Y) and address this memo to Elaine Blake, Director, Sales. Use the current date.
16. Delete the Purchasing Department information at the bottom of the memo and MOVE the Sales Department information FROM THE CLIPBOARD (@ M).
17. Use your initials as the reference initials.
18. Print the memo (@ P).
19. Repeat Steps 11-18 above for the remaining two departments. Use the following information:

    a. Use the current date for both memos.

    b. Address the memos as follows:
       Manufacturing Department - Matthew Starner, Director
       Engineering Department - Willis Bottsworth, Director

COMPLETING THIS PROJECT

________ 1. When you finish this project, you should have the following materials:

________ a. Data base report showing all employees and their vacation dates (in chronological order by vacation dates).

________ b. Memo format (with TO and DATE lines blank and no tables at the bottom.

________ c. Four memoranda addressed as follows:

________ William Hauser, Director, Purchasing

________ Elaine Blake, Director, Sales

________ Matthew Starner, Director, Manufacturing

________ Willis Bottsworth, Director, Engineering

________ 2. Assemble printouts in the order given in No. 1.

________ 3. Attach this sheet to the printouts.

________ 4. Sign your name in the space provided and turn in your project to your teacher.

____
Student Name

____
Period

____
Date

SUGGESTED TEACHER KEYS

(1A) KEY TO VACATION SCHEDULING PROJECT:

File: Vacations
Report: Vac XX

Page 1
3/10/XX

NAME	EMPLOYEE NO.	DEPARTMENT	VACATION DATES	WEEKS
Lavon Sells	12456	Sales	Jun 23	2
Loretta Zimmer	21429	Engineering	Aug 11	2
Pat Timmons	11624	Engineering	Jul 14	1
Harold Wilson	23718	Manufacturing	Jun 30	2
Brian Martin	19642	Purchasing	Aug 18	2
Fred Clark	22816	Sales	Jul 21	3
Carole Henderson	12403	Manufacturing	Jul 7	1
Russell Parks	22123	Manufacturing	Aug 5	2
John Wesley	21736	Purchasing	Aug 18	2
Alice Ivey	25001	Sales	Jun 30	1
Rosemae Perry	17628	Engineering	Aug 25	1
William Briles	15604	Engineering	Jul 21	2
Terri Jones	27611	Manufacturing	Sep 8	3
Hugh Smith	24242	Purchasing	Jul 28	2
Jack Allen	12273	Purchasing	Aug 11	2

(1B) KEY TO MEMO FORM:

ALLIED METALS, INC.
Inter-Office Memorandum

TO:

FROM: Russell Smith, Director, Industrial Relations

DATE:

SUBJECT: Vacations 19XX

Listed below are the employees who have applied for vacations during the months of June, July, August, and September of 19XX.

Please review these scheduled vacations to be sure they do not conflict with any department scheduling. Any conflict of vacation dates for employees in your department is to be handled within the department.

(1C) KEY TO DEPARTMENT HEAD MEMOS:

ALLIED METALS, INC.
Inter-Office Memorandum

TO: William Hauser, Director, Purchasing

FROM: Russell Smith, Director, Industrial Relations

DATE: March 10, 19XX

SUBJECT: Vacations 19XX

Listed below are the employees who have applied for vacations during the months of June, July, August, and September of 19XX.

Please review these scheduled vacations to be sure they do not conflict with any department scheduling. Any conflict of vacation dates for employees in your department is to be handled within the department.

NAME	EMPLOYEE NO.	VACATION DATES	WEEKS
Brian Martin	19642	August 18	2
John Wesley	21736	August 18	2
Hugh Smith	24242	July 28	2
Jack Allen	12273	August 11	2

ALLIED METALS, INC.
Inter-Office Memorandum

TO: Elaine Blake, Director, Sales

FROM: Russell Smith, Director, Industrial Relations

DATE: March 10, 19XX

SUBJECT: Vacations 19XX

Listed below are the employees who have applied for vacations during the months of June, July, August, and September of 19XX.

Please review these scheduled vacations to be sure they do not conflict with any department scheduling. Any conflict of vacation dates for employees in your department is to be handled within the department.

NAME	EMPLOYEE NO.	VACATION DATES	WEEKS
Lavon Sells	12456	June 23	2
Fred Clark	22816	July 21	3
Alice Ivey	25001	June 30	1

ALLIED METALS, INC.
Inter-Office Memorandum

TO: Matthew Starner, Director, Manufacturing

FROM: Russell Smith, Director, Industrial Relations

DATE: March 10, 19XX

SUBJECT: Vacations 19XX

Listed below are the employees who have applied for vacations during the months of June, July, August, and September of 19XX.

Please review these scheduled vacations to be sure they do not conflict with any department scheduling. Any conflict of vacation dates for employees in your department is to be handled within the department.

NAME	EMPLOYEE NO.	VACATION DATES	WEEKS
Harold Wilson	23718	June 30	2
Carole Henderson	12403	July 7	1
Russell Parks	22123	August 5	2
Terri Jones	27611	September 8	3

ALLIED METALS,INC.
Inter-Office Memorandum

TO: Willis Bottsworth, Director, Engineering

FROM: Russell Smith, Director, Industrial Relations

DATE: March 10, 19XX

SUBJECT: Vacations 19XX

Listed below are the employees who have applied for vacations during the months of June, July, August, and September of 19XX.

Please review these scheduled vacations to be sure they do not conflict with any department scheduling. Any conflict of vacation dates for employees in your department is to be handled within the department.

NAME	EMPLOYEE NO.	VACATION DATES	WEEKS
Loretta Zimmer	21429	August 11	2
Pat Timmons	11624	July 14	1
Rosemae Perry	17628	August 25	1
William Briles	15604	July 21	2

CONSUMER PROFILE UNIT

CONTRIBUTOR:
Joan Belk
6830 Dulverton Drive
Charlotte, NC 28226

Objectives:

- The student will become knowledgeable in the use of data base and report software and will integrate computer and decision-making skills.

Procedures:

- Students set up a data base by inputting the categories and options from the Consumer Profile (on following page). (PFS: Use the CREATE/DESIGN option.)

- Students photocopy the Consumer Profile or key their own form. Remind students to place a colon after each entry and leave enough space for their typed answer.

- Students interview 10 classmates and then input the information into their data bases. (PFS: use the ADD FORMS option.)

- Students print out files as follows (Use PFS Report):

  (a) Prepare a list of all students who plan to attend college.
  (b) Prepare a list of students who plan to join the armed forces.
  (c) Prepare a list of students indicating, in three columns, their favorite movie, favorite TV program, and favorite musical group.

Materials needed:

- PFS File or Filing Assistant

- PFS Report or Reporting Assistant

Comments:

- This activity was completed using PFS File and PFS Report. Other data base and report software will work equally well.

CONSUMER PROFILE

LAST NAME: ____________ FIRST NAME: ______________ INITIAL: ______

STREET ADDRESS: ____

CITY/STATE/ZIP: ____

AGE: _____________

AFTER GRADUATION, I PLAN TO

________ GO TO A VOCATIONAL SCHOOL
________ JOIN THE ARMED FORCES
________ GO TO COLLEGE
________ GET A JOB AS A ___________________
________ GET MARRIED

I GET MY REGULAR MONEY BY

________ A JOB
________ REGULAR ALLOWANCE
________ ASKING MY PARENTS
________ GIFTS
________ OTHER ____________________

FIVE THINGS THAT INFLUENCE ME THE MOST ARE

________ PARENTS AND FAMILY
________ COUNSELORS
________ TEACHERS
________ FRIENDS
________ NEWSPAPERS
________ CHURCH
________ BOOKS
________ TV
________ MOVIES

MY FAVORITE MOVIES: ____

____

MY FAVORITE TV PROGRAMS: _____________________________________

____

MY FAVORITE MUSIC IS: ____

____

CREATING A DATA BASE AND PRODUCING A SORTED REPORT

CONTRIBUTOR:
Mike Bertolino
Ball High School
Galveston, TX 77550

Objectives:

- The student will collect data on products and prices, enter it into a data base, sort the data, and produce a report showing price comparisons.

Procedures:

- Distribute handouts to students. Read and discuss procedures.
- Help students set a time frame for the project. Determine the amount of time needed to collect data.
- Monitor student progress at several stages in the project. If a student cannot obtain a grocery database from his/her family, consider using a "standard" grocery list and have students gather prices only for the other two grocery stores for comparison.

Materials needed:

- Handouts: COMPARISON GROCERY SHOPPING USING A DATABASE: INSTRUCTIONS and SAMPLE REPORTS 1 and 2.
- Data Base Software
- Computer
- Printer

Comments:

- After students have received basic instruction on databases and have completed several textbook exercises, they are ready to develop "real life" databases.
- Variations: This exercise can be used for a variety of comparisons, such as clothing, fast food establishments, pharmacies, and catalog shopping
- This activity uses FileExpress for IBM PC's (Expressware, P. O. Box 230, Redmond, WA 98073, 206/481-3040, Compuserve 75226,2020). However, it could be completed with any microcomputer using any data base software.

COMPARISON GROCERY SHOPPING USING A DATABASE

INSTRUCTIONS

Does it pay to comparison shop? You bet it does! In this exercise you will experience first hand how much money you and your family can save by careful shopping.

- Obtain grocery receipts for a period of at least two weeks, but no longer than one month. (NOTE: If you are unable to obtain your family's grocery receipts, build your data file to reflect the items your family may purchase within this time frame.)
- Visit two other grocery stores and record the same information for like items. If you cannot find the exact product and measurements for a given item, select a product that would be comparable.
- Remember, your data file can be created as soon as you define your field names, field types, field lengths, and whether or not a calculation field is required. (Note: A calculation field is not needed.)
- Once all the data has been entered, correct your mistakes, and sort the file into ascending order, from field name one through the last field name.
- Design your report layout to include all your field names. Show duplicate grouping, and print prices according to store name. Print two reports:

Report No. 1:	All field names and all data items for each store. (See sample report printout No. 1.)
Report No. 2:	Comparison report for all stores and all items illustrating total price for each store. (See sample report printout No. 2.)

Sample Report No. 1

ITEMIZED GROCERY LIST FOR ALL STORES

Store Name	Manufacturer	Product	Price	Weight
Gerland's	Del Monte	Canned Corn	.59	17 oz.
Gerland's	Generic	Canned Corn	.43	17 oz.
Gerland's	Parade	Canned Corn	.43	17 oz.
Gerland's	Kellogg's	Cereal-Corn Flakes	1.69	18 oz.
Gerland's	Kellogg's	Cereal-Frosted Flakes	2.57	20 oz.
Gerland's	General Mills	Cereal-Lucky Charms	3.45	20 oz.
Gerland's	Parade	Creamy Peanut Butter	1.77	18 oz.
Gerland's	Peter Pan	Creamy Peanut Butter	2.27	18 oz.
Gerland's	Skippy	Creamy Peanut Butter	2.17	18 oz.
Gerland's	Purina	Dog Chow	5.19	10 lbs.
Gerland's	Alpo	Dog Food (Beef)	4.79	10 lbs.
Gerland's	Gaines	Dog Food-Gravy Train	5.49	10 lbs.
Gerland's	Gino's	Frozen Pizza	1.45	12 oz.
Gerland's	Red Baron	Frozen Pizza	2.49	12 oz.
Gerland's	Totino's	Frozen Pizza	1.69	12 oz.
Gerland's	Armour	Hot Dogs	2.25	16 oz.
Gerland's	Eckrich	Hot Dogs	2.35	16 oz.
Gerland's	Oscar Mayer	Hot Dogs	2.39	16 oz.
Gerland's	Blue Bell	Ice Cream	3.89	1/2 gal.
Gerland's	Borden	Ice Cream	3.25	1/2 gal.
Gerland's	Gerland's	Ice Cream	2.79	1/2 gal.
King Saver	Del Monte	Canned Corn	.48	17 oz.
King Saver	Green Giant	Canned Corn	.53	12 oz.
King Saver	Shurfine	Canned Corn	.43	17 oz.
King Saver	Kellogg's	Cereal-Corn Flakes	1.65	18 oz.
King Saver	Kellogg's	Cereal-Frosted Flakes	2.41	20 oz.
King Saver	General Mills	Cereal-Lucky Charms	2.39	14 oz.
King Saver	Jif	Creamy Peanut Butter	2.10	18 oz.
King Saver	Peter Pan	Creamy Peanut Butter	2/03	18 oz.
King Saver	Shurfine	Creamy Peanut Butter	1.41	18 oz.
King Saver	Purina	Dog Chow	4.91	10 lbs.
King Saver	Alpo	Dog Food (Beef)	4.53	10 lbs.
King Saver	Gaines	Dog Food-Gravy Train	5.33	10 lbs.
King Saver	Jeno's	Frozen Pizza	1.46	10 oz.
King Saver	Red Baron	Frozen Pizza	2.89	12 oz.
King Saver	Totino's	Frozen Pizza	1.65	10 oz.
King Saver	Armour	Hot Dogs	1.63	12 oz.
King Saver	Oscar Mayer	Hot Dogs	2.39	16 oz.
King Saver	Shurfresh	Hot Dogs	.99	12 oz.
King Saver	Blue Bell	Ice Cream	3.59	1/2 gal.
King Saver	Borden	Ice Cream	2/59	1/2 gal.
King Saver	Shurfresh	Ice Cream	1.94	1/2 gal.

Sample Report No. 2
COMPARISON REPORT

Store Name	Manufacturer	Product	Price	Weight
Gerland's	Del Monte	Canned Corn	.59	17 oz.
Gerland's	Generic	Canned Corn	.43	17 oz.
Gerland's	Parade	Canned Corn	.43	17 oz.
Gerland's	Kellogg's	Cereal-Corn Flakes	1.69	18 oz.
Gerland's	Kellogg's	Cereal-Frosted Flakes	2.57	20 oz.
Gerland's	General Mills	Cereal-Lucky Charms	3.45	20 oz.
Gerland's	Parade	Creamy Peanut Butter	1.77	18 oz.
Gerland's	Peter Pan	Creamy Peanut Butter	2.27	18 oz.
Gerland's	Skippy	Creamy Peanut Butter	2.17	18 oz.
Gerland's	Purina	Dog Chow	5.19	10 lbs.
Gerland's	Alpo	Dog Food (Beef)	4.79	10 lbs.
Gerland's	Gaines	Dog Food-Gravy Train	5.49	10 lbs.
Gerland's	Gino's	Frozen Pizza	1.45	12 oz.
Gerland's	Red Baron	Frozen Pizza	2.49	12 oz.
Gerland's	Totino's	Frozen Pizza	1.69	12 oz.
Gerland's	Armour	Hot Dogs	2.25	16 oz.
Gerland's	Eckrich	Hot Dogs	2.35	16 oz.
Gerland's	Oscar Mayer	Hot Dogs	2.39	16 oz.
Gerland's	Blue Bell	Ice Cream	3.89	1/2 gal.
Gerland's	Borden	Ice Cream	3.25	1/2 gal.
Gerland's	Gerland's	Ice Cream	2.79	1/2 gal.
21	21	21	53.39	21
King Saver	Del Monte	Canned Corn	.48	17 oz.
King Saver	Green Giant	Canned Corn	.53	12 oz.
King Saver	Shurfine	Canned Corn	.43	17 oz.
King Saver	Kellogg's	Cereal-Corn Flakes	1.65	18 oz.
King Saver	Kellogg's	Cereal-Frosted Flakes	2.41	20 oz.
King Saver	General Mills	Cereal-Lucky Charms	2.39	14 oz.
King Saver	Jif	Creamy Peanut Butter	2.10	18 oz.
King Saver	Peter Pan	Creamy Peanut Butter	2/03	18 oz.
King Saver	Shurfine	Creamy Peanut Butter	1.41	18 oz.
King Saver	Purina	Dog Chow	4.91	10 lbs.
King Saver	Alpo	Dog Food (Beef)	4.53	10 lbs.
King Saver	Gaines	Dog Food-Gravy Train	5.33	10 lbs.
King Saver	Jeno's	Frozen Pizza	1.46	10 oz.
King Saver	Red Baron	Frozen Pizza	2.89	12 oz.
King Saver	Totino's	Frozen Pizza	1.65	10 oz.
King Saver	Armour	Hot Dogs	1.63	12 oz.
King Saver	Oscar Mayer	Hot Dogs	2.39	16 oz.
King Saver	Shurfresh	Hot Dogs	.99	12 oz.
King Saver	Blue Bell	Ice Cream	3.59	1/2 gal.
King Saver	Borden	Ice Cream	2/59	1/2 gal.
King Saver	Shurfresh	Ice Cream	1.94	1/2 gal.
21	21	21	47.33	21

dBASE III CROSSWORD

CONTRIBUTOR:
Shirley A. Dear
Kent North VoTech High School
Dover, DE 19901

Objectives:

- The student will reinforce his/her knowledge of dBase III commands.

Procedures:

- Students are given the handouts containing the crossword puzzle and clues.

Materials needed:

- Handout: dBASE III CROSSWORD
- Note: Crossword puzzle prepared using Crossword Magic (Mindscape, Inc., 3444 Dundee Road, Northbrook, IL 60062).

Comments:

- Puzzle applies only to Ashton Tate dBase III software.
- Software could be used to allow students or teachers to create crossword puzzles for different topics.

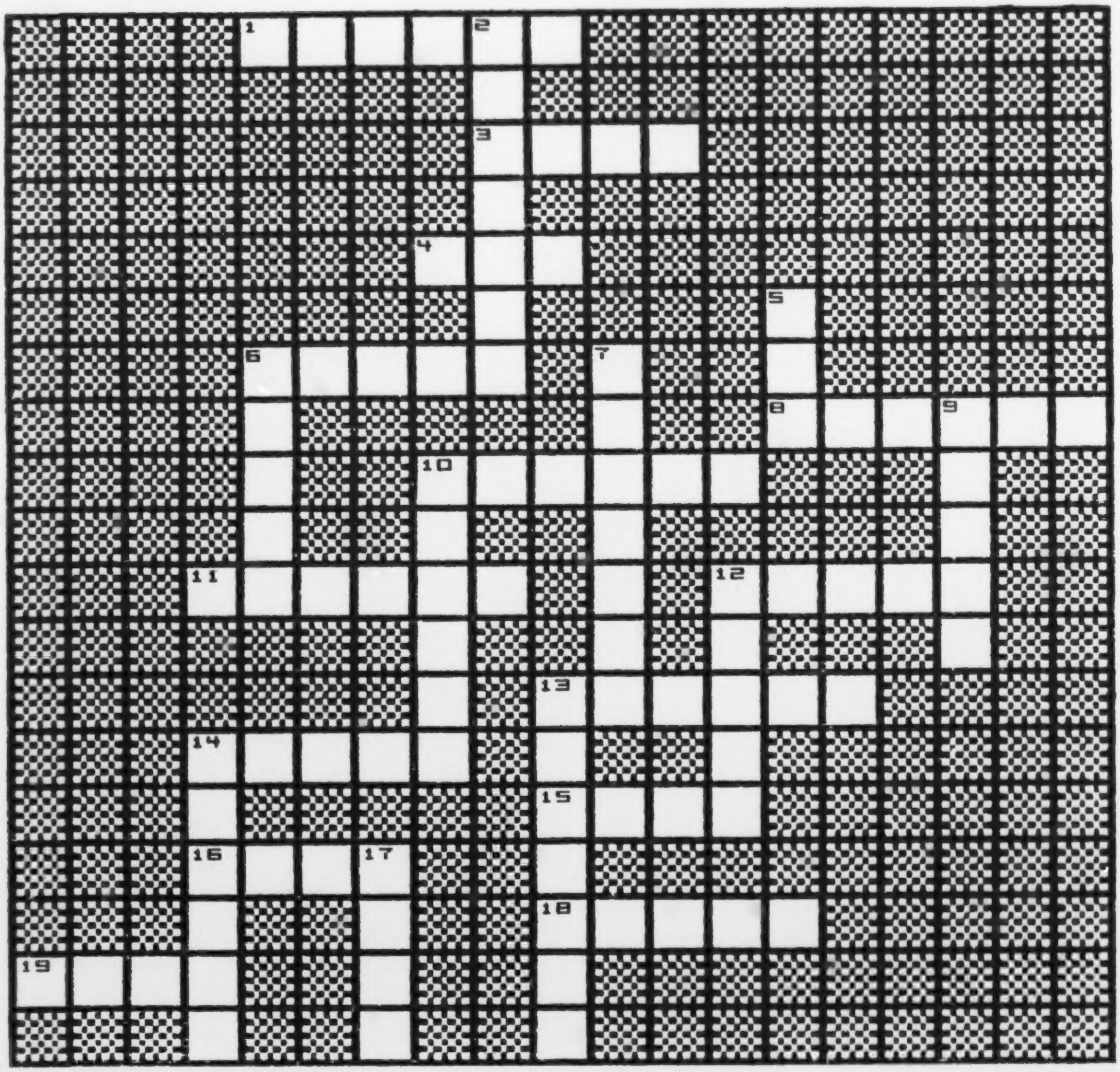
Answers:

```
    REPORT
        E
        PACK
        L
       ZAP
        C    S
    CLOSE A  U
    L     V  MODIFY
    E  APPEND    N
    A  S  R      D
   BROWSE A ERASE
       I  G J    X
       S DELETE
   COUNT I  C
   R     SORT
   EDIT  P
   A  R  LABEL
QUIT  I  A
   E  M  Y
```

Word list:

APPEND
ASSIST
AVERAGE
BROWSE
CLOSE
CLEAR
COUNT
CREATE
DELETE
DISPLAY
EDIT
EJECT
ERASE
INDEX
LABEL
MODIFY
PACK
QUIT
REPORT
REPLACE
SORT
SUM
TRIM
ZAP

dBASE III CROSSWORD


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19

CLUES FOR dBASE III CROSSWORD

ACROSS:

1. Allows us to either create a report format or display data in report format.
3. Permanently deletes records market for deletion from the database.
4. Permanently removes all records from a database and active index files.
6. Closes open files, of either alternate, database, format, index, or procedure types.
8. Changes a database's structure, or creates/edits a command file.
10. Allows us to add new data to our database.
11. Displays a "screenful" of the database and allows us to scan and make changes to the database.
12. Deletes a specified file from the directory.
13. Marks a record for deletion.
14. Counts how many records in a database meet some criterion.
15. Rearranges records on a database into sorted order.
16. Displays existing data in a record and allows us to change its contents.
18. Prints mailing labels in the format specified in a file.
19. Exits dBase III back to the operating system's A> prompt.

DOWN:

2. Changes the current contents of a field with new data.
5. Adds a column of fields, and displays the total.
6. Clears the screen.
7. Computes the average of a numeric field in a database.
9. Creates an index field of sorted data, or uses an existing index to display data in sorted order.
10. Aids in the use of dBase III by presenting menus and help screens.
12. Starts the paper in the printer on a new page.
13. Shows information about a database, or its contents.
14. Creates a format file for mailing labels.
17. Removes trailing blanks from a field's contents.

CREATING AND MAINTAINING A DATA BASE USING IBM FILING ASSISTANT

CONTRIBUTOR:
Bev DiClementi-Brown
Warren Occupational Technical Center
Golden, CO 80401

Objectives:

- The student will design, update, and print a data base using IBM Filing Assistant.

Procedures:

- Key the forms for the Director file prior to using this exercise. The forms can be altered to reflect your geographical area.
- Distribute the student handout.
- Check if the students have both the IBM Filing Assistant software and manual.
- Have students read and work their way through the GUIDE TO IBM FILING ASSISTANT.

Materials needed:

- Handouts: GUIDE TO IBM FILING ASSISTANT: STUDENT DIRECTIONS and FORMS FOR DIRECTOR FILE
- IBM Filing Assistant software and IBM Filing Assistant Manual
- IBM or Compatible PC and Printer

Comments:

- Optional: The checkbook form created in No. 13 can be used with IBM Reporting Assistant to generate a report showing the date, check number, transaction, withdrawal, and deposits. The students can total the withdrawal and deposit columns and count the Check No. column.

Key:

4a. F10
4b. Esc
4c. Options:
1. Design a Form
2. Add Forms
3. Copy
4. Search/Update
5. Print
6. Remove
7. Set Printer
8. Exit
5a. Full
1. 1
2. 2
3. 5
b. Partial
1. Dictaphone, Daphne
2. Computer, Carl
3. Lakewood, 4
c. Numeric
1. Dictaphone, Daphne
Typewriter, Tillie
2. 985-8970

GUIDE TO IBM FILING ASSISTANT
STUDENT DIRECTIONS

1. Check out the following from your instructor: IBM Filing Assistant software and a practice diskette. Label your practice diskette as follows: DATA BASE--YOUR NAME.

2. Boot up with DOS. FORMAT your practice diskette. Copy the sample file, Director, (from Diskette I) onto your practice diskette using the COPY procedure. (Refer to the User's Guide if you do not recall the FORMAT and COPY procedures.)

3. Read pp. 2-15 through 2-20 in the IBM Filing Assistant manual. Put the IBM Filing Assistant diskette in Drive A and your practice diskette in Drive B. Boot up the IBM Filing Assistant diskette by typing "file."

4. Answer the following questions:

   a. What key does IBM Filing Assistant use as its "enter" key? ____

   b. What key allows you to cancel and return to the main menu? ____

   c. When the Main Menu is on your screen, what options are available to you?

      1.
      2.
      3.
      4.
      5.
      6.
      7.
      8.

5. Read pp. 5-1 through 5-20 in the IBM Filing Assistant manual. Complete the following tasks using the Search/Update Function and the Director file you copied. (Remember to key in: b:Director after "Directory or file name" on the main menu.)

   a. FULL ITEM MATCHES

      1) Name: Secretary, Sally — # forms found ____
      2) School: Lakewood High School — # forms found ____
      3) Membership: FBLA Y — # forms found ____

   b. PARTIAL ITEM MATCHES

      1) Name: Dict.. — Full name that appears ________________
      2) Name: ..mpu.. — Full name that appears ________________
      3) City: ..ood — City that appears ________________

   c. NUMERIC ITEM MATCHES

      1) Zip: 80226 — Name of persons with that zip code:

      ____
      ____

      2) Phone number: 98.. — Phone number that appeared:

      ____

   Ask for your supervisor's approval. ________________

GUIDE TO IBM FILING ASSISTANT (continued)

6. Make the following changes using the Search/Update option:
   a. Change Daphne Dictaphone's home school to your home school
   If you have no home school, list WOTC. (Remember, the form is set up with the last name first.)
   b. Change Carl Computer's phone number to 986-5432.
7. Add a form to the file and input your personal information on it.
8. Remove Mike Darington's form from the file.
9. Read pp. 6-1 through 6-11 in the IBM Filing Assistant manual.
   a. Print the Director file specifying two forms per page (refer to p. 6-5).
   b. Print the Director file with only the name and high school, specifying three forms per page.
   c. Print your personal form. (F7)
10. Read pp. 3-1 through 3-16 in the IBM Filing Assistant manual. Design and create your own file. Hint: Have approximately 5-8 items on your form.
11. Add at least 5 forms to the file you have created.
12. Print the file you have just created specifying 3 forms per page.
13. Create a form called "Checkbook" with the following items: Date, Check No. Transaction, Withdrawal, and Deposits. Then enter the following information on that form.
    1. You deposited a paycheck for $350 on October 1.
    2. You wrote check #651 to your local grocer for $35.75 on October 3.
    3. On October 3, you wrote check #652 for $16.50 to your gas station.
    4. On October 5, you wrote check #653 to your bank for $185.
    5. You deposited $50 on 10/10.
    6. You wrote check #654 for cash on 10/15.

14. Print your "Checkbook file" specifying 3 forms per page. Save your file onto your practice disk. Give your practice disk to your spuervisor.

15. Attach all printouts to this LAP and put it in the basket.

Note: Your Checkbook file will resemble the following:

Date	Check No.	Transaction	Withdrawal	Deposits
10/1/--	---	Paycheck		$350.00
10/3/--	651	Local Grocer	$ 35.75	
10/3/--	652	Gas Station	$ 16.50	
10/5/--	653	Your Bank	$185.00	
10/10/--	---	Deposit		$ 50.00
10/15/--	654	Cash	$ 25.00	

FORMS FOR DIRECTOR FILE

NAME (LAST, FIRST): Computer, Carl
MEMBERSHIP FBLA (Y/N): Y
HOME HIGH SCHOOL:Bear Creek High School
STREET ADDRESS: 2543 South Holland Court
CITY: Lakewood
STATE: CO
ZIP: 80228
PHONE NUMBER: 985-8970

NAME (LAST, FIRST): Typewriter, Tillie
MEMBERSHIP FBLA (Y/N): N
HOME HIGH SCHOOL: Lakewood High School
STREET ADDRESS: 85 South Dudley St.
CITY: Lakewood
STATE: CO
ZIP: 80226
PHONE NUMBER: 234-0395

NAME (LAST, FIRST): Secretary, Sally
MEMBERSHIP FBLA (Y/N): Y
HOME HIGH SCHOOL: Arvada High School
STREET ADDRESS: 6875 Urban St.
CITY: Arvada
STATE: CO
ZIP: 80003
PHONE NUMBER: 423-0326

NAME (LAST, FIRST): Information, Inez
MEMBERSHIP FBLA (Y/N): Y
HOME HIGH SCHOOL: Bear Creek High School
STREET ADDRESS: 6900 W. Yale
CITY: Lakewood
STATE: CO
ZIP: 80227
PHONE NUMBER: 935-1245

NAME (LAST, FIRST): Electronic, Eric
MEMBERSHIP FBLA (Y/N): Y
HOME HIGH SCHOOL: Arvada High School
STREET ADDRESS: 12000 W. 58th Avenue
CITY: Arvada
STATE: CO
ZIP: 80003
PHONE NUMBER: 423-3456

NAME (LAST, FIRST): Dictaphone, Daphne
MEMBERSHIP FBLA (Y/N): Y
HOME HIGH SCHOOL: Lakewood High School
STREET ADDRESS: 8800 W. 7th Avenue
CITY: Lakewood
STATE: CO
ZIP: 80226
PHONE NUMBER: 235-4204

NAME (LAST, FIRST): Darington, Mike
MEMBERSHIP FBLA (Y/N): Y
HOME HIGH SCHOOL: Evergreen High School
STREET ADDRESS: 1345 S. Lookout Mountain
CITY: Evergreen
STATE: CO
ZIP: 80439
PHONE NUMBER: 634-2345

NAME (LAST, FIRST): Calculator, Connie
MEMBERSHIP FBLA (Y/N): N
HOME HIGH SCHOOL: Mountain Open Living
STREET ADDRESS: 45678 Highway 45nd Court
CITY: Conifer
STATE: CO
ZIP: 80965
PHONE NUMBER: 782-3453

NAME (LAST, FIRST): Whiteboard, Willie
MEMBERSHIP FBLA (Y/N): Y
HOME HIGH SCHOOL: Chatfield
STREET ADDRESS: 8965 South Simms
CITY: Littleton
STATE: CO
ZIP: 80124
PHONE NUMBER: 789-7865

DATA BASE ON FOREIGN EXCHANGE RATES

CONTRIBUTOR:
Judy Joyce
Red Creek High School
Red Creek, NY 13074

Objectives:

- The student will create a data base of foreign exchange rates and will use the data base to compute currency exchanges.

Procedures:

- Distribute handout FOREIGN EXCHANGE RATES TABLE and discuss the exercise with the students:
    1. What information is needed?
    2. How will we format the data base?
    3. If revisions are needed, how will they be made?
    4. How will you know the data base is accurate?
    5. What is the best way to input the information?
- Using any data base software, have students create a structure which has three fields (country, currency, and rate).
- Key the data from the FOREIGN EXCHANGE RATE TABLE (next page).
- Search for various countries and currencies using LOCATE, LIST, DISPLAY, and other commands. Display currency, rates, etc.
- Input a formula to figure the value of $100 American in any country. Other money values can be used for additional practice. For example:

    Juan is traveling from his home in Chile to America later this month. He needs $500 American money for his airline ticket. How many pesos will he need?

Materials needed:

- Handout: FOREIGN EXCHANGE RATES TABLE
- Data Base Software
- Microcomputer

Comments:

- This idea can be implemented using any brand of computer with appropriate data base software.
- The teacher can call his/her bank to update the foreign exchange rates.

FOREIGN EXCHANGE RATE TABLE*

Directions: You are going to set up a data base for foreign exchange rates. You will need to be able to convert American dollars into foreign currency and vice versa. You are given the country's name, the currency, and the rate of exchange below:

Argentina (strl)	.7752
Australia (dollar)	.6617
Austria (schilling)	.0773
Belgium (franc)	.0262
Brazil (cruzeiro)	.0635
Britain (pound)	1.5190
Canada (dollar)	.7360
Chile (peso)	.0049
China (yuan)	.2703
Columbia (peso)	.0045
Denmark (krone)	.1432
Ecuador (sucre)	.0068
Egypt (pound)	.7353
Finland (markka)	.1629
Greece (drachma)	.0075
Holland (guilder)	.4818
Hong Kong (dollar)	.1290
India (rupee)	.0765
Indonesia (rupiah)	.0006
Iran (rial)	.0313
Iraq (dinar)	3.2110
Ireland (punt)	1.4290
Israel (shekel)	.6177
Italy (lira)	.0008
Japan (yen)	.0065

---

* Note: represents what one unit of foreign currency will cost in American dollars. For example, it would cost you nearly $1.52 to purchase one British pound.

SETTING UP A DATA BASE AND PRODUCING PRINTED LISTINGS

CONTRIBUTOR:
Frieda Lofts
West Toronto Secondary School
Toronto, ON Canada
M6H 3Y1

Objectives:

- The student will create a data base, input records, change records, and produce listings from the data base.

Procedures:

- Review the handout: STUDENT PROJECT: DATA MANAGER with the students, (first page).
- Give the student a copy of the FILE UPDATE, (second page), after he/she has completed with the instructions on the first page and turned in the printout and cover sheet.

Materials needed:

- Handouts: STUDENT PROJECT: DATA MANAGER, first page, and FILE UPDATE, second page
- Data base software

Comments:

- Although the data for this activity is oriented to Canadian cities, the concept could be applied to U. S. cities, states, and zip codes.
- The exercise is designed also to review alphabetic, numeric, subject and geographic filing in a realistic simulation.
- The exercise can be completed by using filing cards and indexes or can be put on a data base.

Cover Page Components:

NAME: ______________
TOTAL POINTS: _______

		POINTS	DATE SUBMITTED	POINTS RECEIVED
1.	Cover Page	5	_____	_____
2.	First Print	20	_____	_____
3.	Alphabetic Listing	10	_____	_____
4.	Sales Manager's List	5	_____	_____
5.	Truck Dealers' List	5	_____	_____
6.	West Coast List	5	_____	_____
	TOTAL	50		_____

Keyboarding = 3
Layout = 2
5

SOLUTIONS WITH SUGGESTED GRADING SCALE

INITIAL PRINT

Customer Number	Customer Name	City	Province
1001	Starling, Carol	North Vancouver	BC
3001	Cousineau, Ed	Belleville	ON
3003	Andrekson, T. J.	Rouyn	PQ
3002	Ormheim, Jake	Hamilton	ON
2001	Sigurdson, Pat	Edmonton	AB
4001	Schulhauser, M.	Saint John	NB
4002	Starling, Brent	Hailfax	NS
2002	Constantine, Mi	Winnipeg	MB
1002	Lim, Andrea	Vancouver	BC
2003	Schwegler & Co.	Calgary	AB
2004	Keighley, J. Ltd.	Medicine Hat	AB
2005	Lim, T.K.A.	Moose Jaw	SK
4003	Sigurdson, J. L.	Charlottetown	PE

Report title = 1
Field Names = 2
Correct Fields = 6
Keyboarding (1 off per error to max of 6) = 6
Indexing (1 off per error to max of 5) = 5
Suppression of title = 1
20

ALPHABETIC ORDER

3003	Andrekson, T. J.	Rouyn
2002	Constantine, Mi	Calgary
3001	Cousineau, Ed	Belleville
2004	Keighley, J. Ltd.	Medicine Hat
1002	Lim, Andrea	Vancouver
3002	Ormheim, Jake	Hamilton
4001	Schulhauser, M.	Saint John
2003	Schwegler & Co.	Calgary
3004	Shantz, Hugh L.	Montreal
2001	Sigurdson. Pat	Edmonton
4002	Starling, Brent	Halifax
1001	Starling, Carol	North Vancouver
2006	Starling, Liana	Brandon
4004	Sterling, C. W. E.	Gander
4003	Sterling, Carol	St. John's

Appropriate title = 1
Alphabetic Order = 1
Correct 15 files = 2
1 mark for each addition and change = 5
Correct fields Printed = 1
10

NUMERIC EAST TO WEST

4004	Sterling, C. W. E.	Gander	Fort Lifts
4003	Sterling, Carol	St. John's	Trucks
4002	Starling, Brent	Halifax	Small Engines
4001	Schulhauser, M.	Saint John	Fork Lifts
3004	Shantz, Hugh L.	Montreal	Small Engines
3003	Andrekson, T. J.	Rouyn	Fork Lifts
3002	Ormheim, Jake	Hamilton	Trucks
3001	Cousineau, Ed.	Belleville	Small Engines
2006	Starling, Liana	Brandon	Engineer
2004	Keighley, J. Ltd.	Medicine Hat	Small Engines
2003	Schwegler & Co.	Calgary	Small Engines
2002	Constantine, Mi	Calgary	Large Engines
2001	Sigurdson, Pat	Edmonton	Large Engines
1002	Lim, Andrea	Vancouver	Engineer
1001	Starling, Carol	North Vancouver	Trucks

Correct numeric order = 3
title = 1
Correct fields = 1
5

TRUCK DEALERS

Ormheim, Jake	Belleville	ON
Starling, Carol	North Vancouver	BC
Sterling, Carol	St. John's	NF

title = 1
3 Names = 3
Correct Fields = 1
5

WEST COAST CUSTOMERS

Lim, Andrea	Vancouver	BC
Starling, Carol	North Vancouver	BC

title = 1
2 Names = 2
Cust # missing = 2
5

STUDENT PROJECT: DATA MANAGER

In this assignment, you will create a data base for The Rusty Widget Manufacturing Company. You will be asked to print information under the following headings:

1. Subject (trucks, etc.)
2. Geographic location (Province)
3. Customer Number
4. Customer Name (Surname)

Customers are assigned numbers based on the province in which they are located.

1000 West Coast (BC)
2000 Prairies (AB, SK, MB)
3000 Central Canada (ON, PQ)
4000 Maritimes (NB, NS, PE, NF)
5000 Northern Territories (YK, NT)

e.g. Our first customer in BC would be 1001--First Producers Ltd., BC.; our second would receive the number 1002, etc.

1. Design your file in order to be able to find all the information needed to prepare and print lists under the above headings.

2. Print a hard copy (in report form) of the data shown below without sorting or rearranging it in any particular order. Include Customer Numbers and omit Subject field.

THE RUSTY WIDGET MANUFACTURING COMPANY
Customer Files

Carol Starling	North Vancouver, BC	Trucks
Ed. Cousineau	Belleville, ON	Small Engines
T.J. Andrekson	Rouyn, PQ	Fork Lifts
Jake Ormheim	Hamilton, ON	Trucks
Pat Sigurdson	Edmonton, AB	Large Engines
M. Schulhauser	Saint John, NB	Fork Lifts
Brent Starling	Halifax, NS	Small Engines
Mike Constantine	Winnipeg, MB	Large Engines
Andrea Lim	Vancouver, BC	Engineer
Schwegler & Co.	Calgary, AB	Small Engines
J. Keighley, Ltd.	Medicine Hat, AB	Small Engines
T.K.A. Lim	Moose Jaw, SK	Engineer
J.L. Sigurdson	Charlottetown, PE	Trucks

3. Prepare a Project Cover Page. (See your teacher for components and required layout.) Attach your printout from No. 2. Turn in the Cover Page and the printout.

Student Project: Data Management (continued)

FILE UPDATE

During the past month, several changes have taken place in the Rusty Widget Manufacturing Company file. Make the necessary changes before printing the lists that are needed for the various managers.

ADDITIONS:

The following have become customers and need to be added to the file. (Don't forget to assign numbers to the new accounts.)

Carol Sterling	St. John's, NF	Trucks
C.W. Sterling Enterprises	Gander, NF	Fork LIfts
Liana Starling	Brandon, MB	Engineer
Hugh L. Shantz	Montreal, PQ	Small Engines

DELETIONS:

The following companies no longer do business with this company and need to be removed from the data file.

T.K.A. Lim	Moose Jaw, SK	Engineer
J.L. Sigurdson	Charlottetown, PE	Trucks

CHANGE OF ADDRESS:

Mike Constantine has moved his business to Calgary, AB.

PRINTOUT REQUESTS (Develop appropriate titles for each printout.):

1. The manager of our Public Relations Department has asked for a list of customers arranged alphabetically to update her records. Print a list of our customers showing their account number, name (in alphabetic order), and the city in which they are located.

2. Our sales manager is going on a business trip and wishes to have a list of our customers arranged by customer number from the east coast to the west coast. He will need the customer number, the customers' name, the city, and the subject.

3. The manager of our truck division has asked for a listing of all of our customers that buy widgets for trucks. The request states that only the customer's name, city, and province are required.

4. A request has been received for a listing of our customers on the west coast. This request comes from an outside source--do not give them our customer account numbers.

USING ACTUAL DATA FROM REAL ESTATE MULTIPLE LISTINGS TO BUILD A DATA BASE

CONTRIBUTOR:
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Macomber-Whitney VoTech High School
Toledo, OH 43624

Objectives:

- The student will use dBase III to create a structure and prepare reports to simulate a realtor's data base.

Procedures:

- Using old multi-list books donated from local realtors, the students develop a realtor's data base.
- Each student selects a local real estate company to represent and then searches out his/her company's listings.
- Each student develops his/her own data base and enters such information as home address, city, number of bedrooms, number of bathrooms, family room, listing price, listing date, and square footage into the data base.
- Students can then be asked to display and print a variety of "realtor" requests.
- The number of homes listed is up to the instructor.

Materials needed:

- Microcomputers/printer
- dBase III software

Comments:

- Although this specifies the use of dBase III, any other data base software could be used.

CREATING AND MAINTAINING A DATA BASE USING APPLEWORKS

CONTRIBUTORS:
Nan Shapiro
La Serna High School
Whittier, CA 90605
and
Jean Huffman
Los Alamitos High School
Los Alamitos, CA 90720

Objectives:

- The student will be able to create a data base, maintain records in a data base, generate a report, and generate mailing labels using Appleworks.

Procedures:

- Have students load Appleworks and insert a data disk. Proceed with step 1 of student handout.
- Use the Potential Student Difficulties sheet, which follows the student instructions sheet step by step, to anticipate student problems.

Materials needed:

- Handout: STUDENT INSTRUCTIONS: SETTING UP AND MAINTAINING A DATA BASE
- Apple IIe computer and printer with Appleworks software
- Data disk
- Address labels (optional)

Comments:

- This activity could be done using other data base software. If the teacher has dBase III or IV software and knows how to use it, the activity could be adapted easily.
- Background: For students to be successful, they must know the open apple commands for working the data base. This activity is at the very basic level in applying the program. The student instructions will direct them step by step through the activity; however, the necessary commands are not included intentionally.

Terminology:

- Field Name--A generic term that identifies each data element in a data base. Appleworks refers to the field name as "category."

STUDENT INSTRUCTIONS

Setting Up and Maintaining a Data Base

PURPOSE: In this activity you will establish a data base of FBLA members, print a table of students who have not paid their dues, and create a label format for all members in FBLA.

1. Set up a data base (call the file "FBLA Base") using the following field names (categories):

LAST NAME
FIRST NAME
PHONE
STUDENT #
GRADE
TEACHER
ROOM #
DUES PAID
OFFICE
COMMITTEE
P/CONF
WKSP
SS/CONF
ST/CONF
NAT/CONF
ADDRESS
CITY
STATE
ZIP
BIRTHDATE

2. Save your field names (categories).
3. Make a standard value for:

CITY: Chino
STATE: CA
ZIP: 91710

4. Enter the remaining data for 10 students. (Make up your own data if your teacher has not supplied it.)
5. Change the file name to "FBLA Records."
6. Save your data.
7. Set up a table using the Report Format:
    a. Give the table report a name.
    b. Set up the table to include: FIRST NAME, LAST NAME, PHONE, TEACHER, ROOM #, and DUES PAID.
    c. Delete all other categories.
    d. Change the record selection rules to choose only students who have not paid their dues.
    e. Arrange the data alphabetically by LAST NAME.
    f. Print out the table.
8. Set up a label using the Report Format:
    a. Give the label report a name.
    b. Create a mailing address label to include: FIRST NAME, LAST NAME, ADDRESS, CITY, STATE, and ZIP.
    c. Delete all other categories.
    d. Arrange the categories appropriately for an address label.
    e. Justify your categories that will print on the same line.
    f. Print out a copy of the address labels for all students.

POTENTIAL STUDENT DIFFICULTIES

Follow the instruction sheet step by step:

1. The word CATEGORY must be deleted before any field names (categories) are entered.

2. Make sure to save the data base skeleton before starting to enter data. This process will save a blank record for possible future needs.

   NOTE: When creating any data base or spreadsheet, saving the skeleton is a good practice to follow.

3. The command @V is used to create a standard value.

4. No potential difficulties.

5. Students cannot save the data under the FBLA BASE or it will save over the skeleton and it will be erased. Use @N to change the file name.

6. No potential difficulties.

7. * The command @P will get them to the Report Format; select "create a table."

   * Use @D to delete any unwanted categories. Emphasize that when they delete a category, it is only deleted off that table, not off the data base.

   * Use @R to make record selections.

   * Use @A to arrange the data alphabetically by last name. Make sure the cursor is on the last name category when the command is given.

8. * After printing the table, the ESC Key will take them back to the Report Format; select "create a label."

   * The command @D will delete unwanted categories. Again, emphasize that when they delete a category, it is only deleted off that table, not off the data base.

SETTING UP A DATA BASE AND PRODUCING PRINTED REPORTS

CONTRIBUTOR:
Sandra Tuttle
University of Toronto
Toronto, ON Canada
M55 2R7

Objectives:

- The student will create a single data base and generate various reports by sorting and selecting data to meet established criteria.

Procedures:

- See assignment sheets.

Materials needed:

Handouts: DATA BASE ASSIGNMENT 1, ASSIGNMENT 2, and ASSIGNMENT 3

- Data base software. The attached exercises may be completed using File Express and Data Manager.

- File Express, Expressware (Shareware for the IBM PC), P. O. Box 230, Redmond, WA 98073, 206/643-3503. Inexpensive, powerful, easy-to-use software.

Comments:

- Data Manager is an elementary program available to Ontario teachers for little cost, but it is not as powerful or easy to use as File Express.

- The exercises have been designed to be flexible enough to be used on any simple software package.

Source: Materials based on a data processing curriculum document developed by the Halton Board of Education, Burlington, Ontario; the Peel Board of Education, Mississauga, Ontario; and the Hamilton Board of Education, Hamilton, Ontario.

DATA BASE
ASSIGNMENT NO. 1

The following are 12 records from the student file of a data base created for Wilson Secondary School. Each record contains 9 fields of information.

WILSON SECONDARY SCHOOL
STUDENT FILE

Name	Number	Sex	Grade	Math	Data	Eng.	Hist.	Typ.
Al E. Gator	2601	M	9	55	73	63	77	60
Terry Towel	4522	F	10	98	90	88	85	48
Jan Itor	1947	F	11	73	40	33	53	68
Bill Collector	5683	M	12	82	77	53	66	43
Manuel Labour	9923	M	13	58	45	51	50	59
Barb Wire	2210	F	9	72	54	63	75	60
Guy Wire	7301	M	9	26	82	71	65	50
Adam Baum	2865	M	11	53	68	58	61	49
Patty Cake	3572	F	13	81	92	68	55	60
Ann Surs	1790	F	12	86	24	35	51	63
Rhoda Bike	6587	F	13	75	58	30	82	75
Bobby Sox	2906	M	10	73	61	42	78	54

1. Create the file and name it STUDENT. Be sure to enter the surname first (Gator, Al E.) to permit an alphabetical sort.

2. Sort the students' names in alphabetical order.

3. Print the file in report format and include the students' names, student numbers, sex, and grades. (Identify the hard copy as Printout 1.)

4. Print a report of the students taking DATA including their names, grades, and marks arranged from highest mark to lowest mark. (Identify the hard copy as Printout 2.)

SAMPLE OUTPUT
DATA BASE ASSIGNMENT 1

Printout 1

WILSON SECONDARY SCHOOL
STUDENT FILE

May 18, 19XX — Page 1

NAME	NUMB	SEX	GR
Baum, Adam	2865	M	11
Bike, Rhoda	6587	F	12
Cake, Patty	3572	F	13
Collector, Bill	5683	M	12
Gator, Al E.	2601	M	09
Itor, Jan	1947	F	11
Labor, Manuel	9923	M	13
Sox, Bobby	2906	M	10
Surs, Ann	1790	F	12
Towel, Terry	4522	F	10
Wire, Barb	2210	F	09
Wire, Guy	7301	M	09

Printout 2

WILSON SECONDARY SCHOOL
DATA STUDENTS

May 18, 19XX — Page 1

NAME	DAT
Cake, Patty	92
Towel, Terry	90
Wire, Guy	82
Collector, Bill	77
Gator, Al E.	73
Baum, Adam	68
Sox, Bobby	61
Bike, Rhoda	58
Wire, Barb	54
Labour, Manuel	45
Itor, Jan	40
Surs, Ann	24

DATA BASE
ASSIGNMENT NO. 2

Set up an inventory file with the following records:

Stock Number	Item	Selling Price	On Hand
81003	Cabbage Patch Doll	29.99	50
81004	Smurf Big Wheel	26.95	30
81005	Frogger Pool	39.99	75
29001	VCR	499.00	35
29002	Commodore 64	255.00	20
29003	Typewriter	160.00	25

1. Print out the inventory file with a heading and with the items arranged in ascending order by their stock number. (Identify the hard copy as Printout 1.)

2. Revisions and Printouts:

   (a) Make the following revisions to the inventory file: As a result of sales, there are 24 Smurf Big Wheels, 20 VCR's, and 18 typewriters on hand. Inventory items are reordered when there are fewer than 25 on hand.

   (b) Print out an inventory reorder report that lists only the items that need to be reordered. (Identify the hard copy as Printout 2.)

3. All Commodore 64's have been sold and we have decided not to stock the item. Delete the record from the inventory file.

4. Print out a report listing only the items that sell for less than $200. Print only the Stock Number, Item name and Selling Price. Arrange the selling prices in ascending order. (Identify the hard copy as Printout 3.)

SAMPLE OUTPUT
DATA BASE ASSIGNMENT 2

Printout 1

```
                          INVENTORY FILE

May 21, 19XX                                              Page 1

    STOCK        ITEM                    SELLIN       ON
----------------------------------------------------------------
    29001        VCR                     499.00       35
    29002        Commodore 64            255.00       20
    29003        Typewriter              160.00       25
    81003        Cabbage Patch Doll       29.99       50
    81004        Smurf Big Wheel          26.95       30
    81005        Frogger Pool             39.99       75
```

Printout 2

```
                          WILSON SALES
                      ITEMS TO BE RE-ORDERED

May 21, 19XX                                              Page 1

    STOCK        ITEM                    SELLIN       ON
----------------------------------------------------------------
    29001        VCR                     499.00       20
    29002        Commodore 64            255.00       20
    29003        Typewriter              160.00       18
    81004        Smurf Big Wheel          26.95       24
```

Printout 3

```
                          WILSON SALES
               ITEMS SELLING FOR LESS THAN $200

May 21, 19XX                                              Page 1

    STOCK              ITEM                          SELLIN
----------------------------------------------------------------
    81004              Smurf Big Wheel                26.95
    81003              Cabbage Patch Doll             29.99
    81005              Frogger Pool                   39.99
    29003              Typewriter                    160.00
```

DATA BASE
ASSIGNMENT NO. 3

You are employed by a company which sells real estate. Your job is to set up and maintain a data base for use by the company's management. They are interested in obtaining a sales representative's sales for a month, the area of the city where the sales were made, the type of sales (commercial, industrial, or residential), and when these sales were made.

Your first task is to set up a suitable data base and enter the following information: (Note: Do not type a space in the amounts when you key the data. It is shown here with the space to make it easy to read.)

SALES FOR JANUARY

Name	Type	Area	Amount
B. Salming	R	North	80 000
R. Vaive	C	Central	170 000
J. Brubaker	I	North	225 499
B. Salming	R	South	100 000
B. Salming	R	South	79 900
R. Corey	R	South	100 000
A. Frame	C	Central	170 000
J. Brubaker	C	East	149 900
B. Salming	R	East	80 400

1. Print a report which ranks the sales for the month (highest to lowest) include the name, amount, and area fields. (Identify the hard copy as Printout 1.)
2. Print a report for B. Salming; include the area, the amount, and name the report SALMING. (Identify the hard copy as Printout 2.)
3. Update the sales rep file by entering the following information for the month of February:

SALES FOR FEBRUARY

Name	Type	Area	Amount
B. Salming	R	West	79 900
R. Corey	R	South	99 900
J. Brubaker	C	North	160 000
B. Caudill	R	East	110 900

4. Print a report of residential sales made by B. Salming in January and February; include the month, area, and amount fields. (Identify the hard copy as Printout 3.)

SAMPLE OUTPUT
DATA BASE ASSIGNMENT 3

```
Printout 1                    WILSON REALTY
                   JANUARY SALES (HIGHEST TO LOWEST)

Jan. 01, 19XX                                                  Page 1

     NAME                       AMOUNT                   AREA
----------------------------------------------------------------------

     Brubaker, J.               225499                   North
     Vaive, R.                  170000                   Central
     Frame, A.                  170000                   West
     Brubaker, J.               149900                   East
     Corey, R.                  100000                   Central
     Salming, B.                100000                   South
     Salming, B.                 80400                   East
     Salming, B.                 80000                   North
     Salming, B.                 79900                   South
```

```
Printout 2                    WILSON REALTY
                      B. SALMING--JANUARY SALES

Jan. 01, 19XX                                                  Page 1

                  NAME                            AMOUNT
                  ----------------------------------------
                  South                           100000
                  East                             80400
                  North                            80000
                  South                            79900
```

```
Printout 3                    WILSON REALTY
      B. SALMING--RESIDENTIAL SALES FOR JANUARY AND FEBRUARY

Jan. 01, 19XX                                                  Page 1

     MONTH                     AREA                     AMOUNT
----------------------------------------------------------------------
     January                   South                    100000
     January                   East                      80400
     January                   North                     80000
     January                   South                     79900
     February                  West                      79900
```

USING dBASE TO ADDRESS ENVELOPES

CONTRIBUTOR:
Ivan Wallace
East Carolina University
Greenville, NC 27858-4353

Objectives:

- The student will create a dBase program that can address an envelope by using the data that has been stored in the database.

Procedures:

- Create a database structure using the field names FN, LN, STR, CITY, ST, and ZIP.
- Key three sets of data into the database. Use student data for added interest.
- Name the database "ENVDEMO."
- Now, follow the instructions on the attached sheet.

Materials needed:

- Handout: HOW TO PROGRAM IN dBASE
- dBase software
- IBM or IBM compatible microcomputer
- Printer (optional)

HOW TO PROGRAM IN dBASE

1. Place your dBase disk in Drive A and load dBase
2. Use the database, ENVDEMO
3. At the dot prompt, key CREATE COMM ENV
4. KEY the following program (You can edit using WordStar commands)

```
clear
store '                       ' to sp
set talk off
store  upper(trim(fn) + ' ' + trim(ln)) to name
store  upper(str) to street
store  upper(trim(city) + '  ' + st + '  ' + zip) to address
?
?
?
?
?
?
?
?
?
?
?
? sp + name
? sp + street
? sp + address
```

5. After you key in the program and proof it, use Control-END to quit it.
6. At your dot prompt, move the pointer to any of the records and type DO ENV.
7. It will produce an address appropriate for an envelope on the screen. You can now do a screen dump to address an envelope by pressing Shift + PrintScreen.
8. If it doesn't work, edit it by keying MODIFY COMM ENV. Then, save it and rerun it by doing steps 5 and 6 above.

THIS PROGRAM IS CALLED A COMMAND FILE. IT HAS THE EXTENSION PRG AND IS ACTUALLY A PROGRAM THAT IS VERY MUCH LIKE BASIC. YOU CAN SAVE ANY SERIES OF COMMANDS IN FILES LIKE THIS TO EXECUTE COMMANDS QUICKLY WITHOUT HAVING TO REMEMBER THE SYNTEX OF THE STATEMENTS--THESE ARE ALSO CALLED MACROS.

ILLUSTRATION FOR COMPARING COMPUTER DATA BASE TO TRADITIONAL FILING CABINET

CONTRIBUTOR:
Marilyn Wilkins
Eastern Illinois University
Charleston, IL 61020

Objectives:

- The student will develop a conceptual framework for understanding data bases by comparing them to a filing cabinet--something with which most students are familiar.

Procedures:

- Reproduce the table and illustration (on next page) and distribute to students.
- NOTE: If you use data base software other than RBASE 5000, modify column 1 of the table and the illustration terminology to reflect the terminology of the data base software you are using.

Materials needed:

- Student copies of the table and illustration (on next page)

Comments:

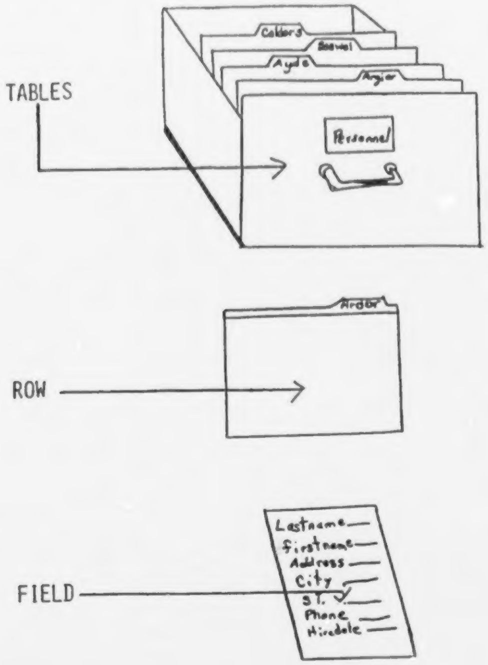
- This exercise can be adapted to Appleworks, dBase III+ or dBase IV, DataEase or any other data base software available in your school.

Terminology:

- RBASE 5000--specific database software package. It is similar to dBase III+ by Ashton Tate.

RBASE	GENERIC DATA BASE	MANUAL FILING SYSTEM
Tables (relation)	File	File drawer--or record series--a specific kind of information--such as personnel, school lists, sales representatives
Rows	Rows or record	Individual folder--data on one person or record
Field (attribute column or item)	Field	Individual piece of information on a sheet of paper

DATABASES--FILES
(RBASE 5000)


Calders
Boswel
Ayde
Angier
TABLES
Personnel
Ardor
ROW
Lastname
firstname
Address
City
ST.
Phone
Hiredate
FIELD

Graphics

Category 12D

GRAPHING ACTIVITIES USING GRAPHING ASSISTANT

CONTRIBUTOR:
Dale A. Ekstrom
Mandan High School
Mandan, ND 58554

Objectives:

- The student will use statistical data to develop charts and graphs.

Procedures:

- Distribute handout: GRAPHING ASSISTANT to students and explain the assignment.

Materials needed:

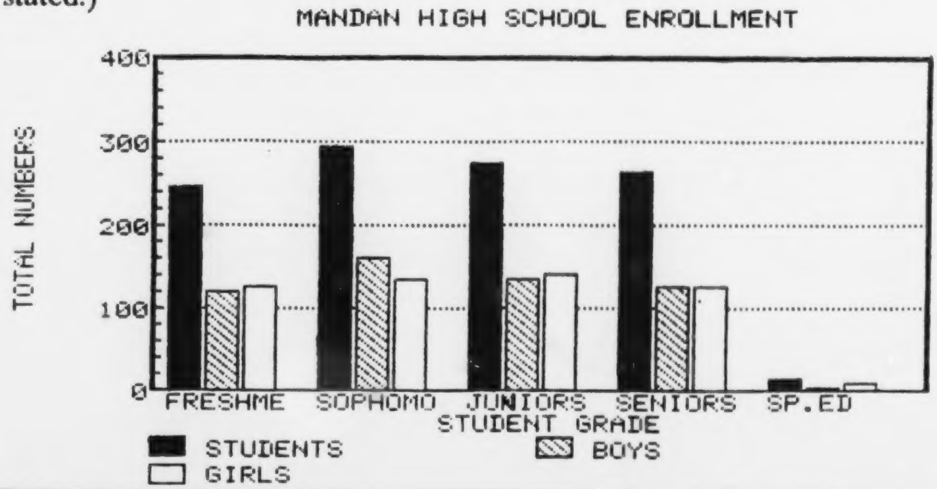
- Handout: GRAPHING ASSISTANT
- Graphing Assistant software
- IBM PC or compatible

Comments:

- This exercise can be adapted easily to other graphing software.
- This exercise holds the student's interest well.

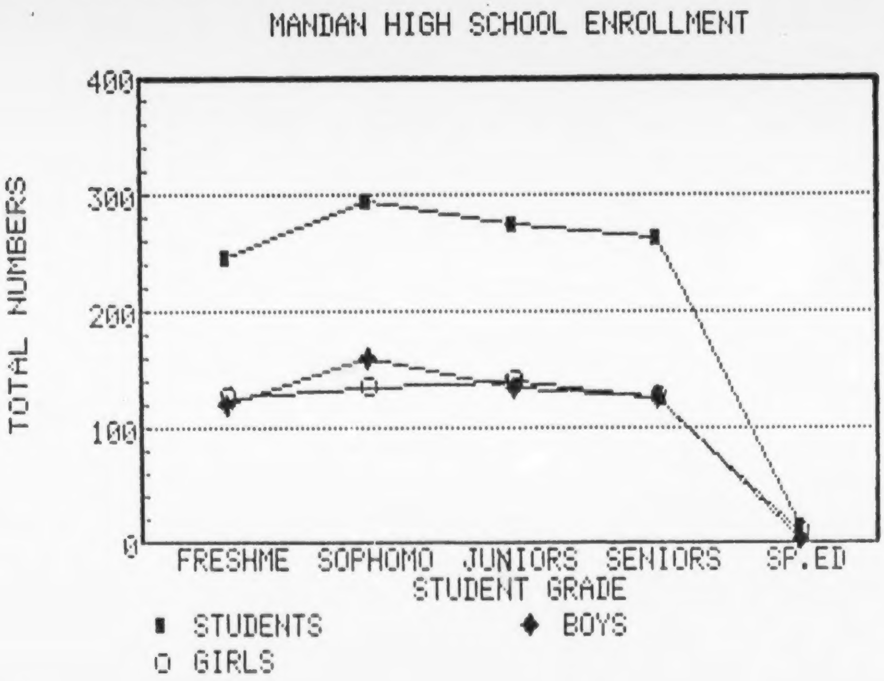
Key:

Graph for Step 11 (NOTE: Same graph for Step 12 with adjustments as stated.)

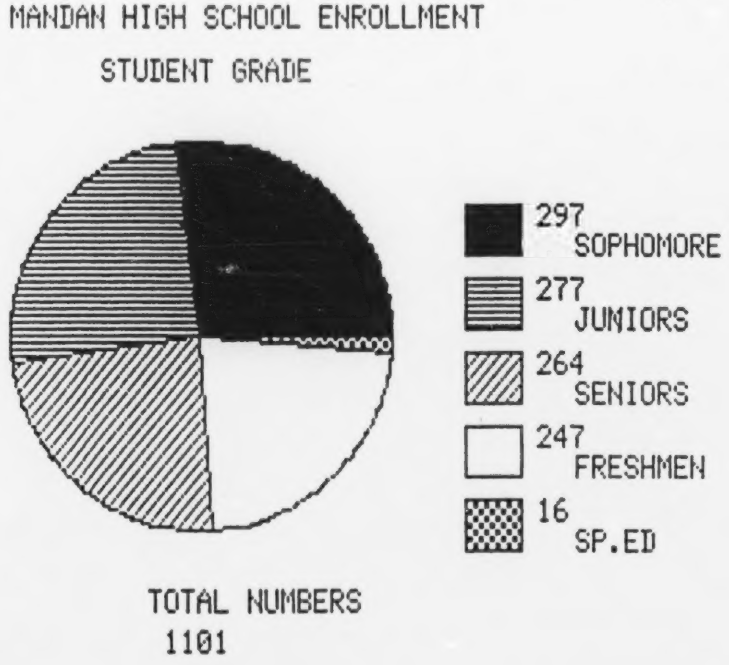


Key: (continued)

Graph for Step 13 (line)



Graph for Step 13 (pie)



GRAPHING ASSISTANT

This program takes statistical data or numbers and puts them in a chart or graph of your choice. The advantage that this type of program offers is that it is easy to the person reading or interpreting the information to get a "picture" of what is going on.

There is a choice of Bar Charts, Line Graphs, Pie Charts and Percent Pie Charts. You will have the opportunity to create each of these types of graphs as you go through the next activity.

Step 1. Insert a DOS in the Disk Drive and turn the power switch on and press the square button on the front of the computer.

Step 2. When you see the A> on the screen, remove the DOS and put the Graphing Assistant program diskette in the Disk Drive. Type the letter "g" and press the "Enter" key.

Step 3. When the Main Menu for Graphing Assistant appears on the screen type "1" at Selection number. Press the "Enter" key.

Step 4. A "Scratchpad" should appear on your screen. The cursor will be flashing in the X Data format area at the top of the screen. Enter an "I" which means "identifier". Other options are N - numeric or D - date. Press the tab key to move the cursor to the X Data area.
The "scratchpad" will look like this:

X Data format:

X data	Graph A	Graph B	Graph C	Graph D

Step 5. With the cursor in the X Data block, enter the word FRESHMEN on the first line, press the tab key to move to Graph A and type in the number 247; press the Enter key to return to X Data. On the second line, enter the word SOPHOMORE, move to Graph A and type in 297. Press the Enter key. Enter JUNIORS on the third line, tab to Graph A and enter 277. Press the Enter key. Enter SENIORS on the fourth line, tab to Graph A and enter 264. Press the Enter key. Enter SP.ED. on the fifth line, tab to Graph A and enter 16.

Your graph should look like the following display:

X Data format: I

X Data	Graph A	Graph B	Graph C	Graph D
FRESHMEN	247			
SOPHOMORE	297			
JUNIORS	277			
SENIORS	264			
SP. ED.	16			

Step 6. Press Fn10. The Main Menu should appear. Type "3" and press the "Enter" key. The screen should show a display of the information you entered on the Scratchpad. Notice that there is no heading on this graph nor is there any information on the left side of the graph. We will now fix the graph. Press the "Esc" key to return to the Main Menu.

Step 7. Type "2" at Selection Number. The Define Chart Menu will appear on your screen. Move the cursor to the "Legend" area where it shows Graph A. Type the words STUDENTS over Graph A. Using the tab key move the cursor to Graph B. Replace Graph B with BOYS, and Graph C with GIRLS.

Step 8. Move the cursor to Chart Title and type MANDAN HIGH SCHOOL ENROLLMENT; tab to X Axis title and type "STUDENT GRADE, tab to Y Axis title and type TOTAL NUMBERS. Press the "Enter" key.

Step 9. At the Main Menu type "3" and press "Enter" to see the new display. Notice that the graph now has side headings, a main heading and the color bars on the bottom of the graph have a definition.

Step 10. Before we print a copy of the chart, let's go back to the "scratchpad" (option 1 from the Main Menu) and enter the following information for Graph B and Graph C:

Graph B	Graph C
121	126
161	136
136	141
126	138
5	11

Step 11. Let's print a copy of the chart. Press "Esc" to return to the Main Menu. Type "5" at Selection number and press the "Enter" key. A Printer Menu should appear on the screen. At Selection number type a "1" then press the "Enter" key. At the next screen, turn the printer switch on, position the paper and press "Enter". You will notice that it takes much longer for graphics to print than it does for text. BE PATIENT!!

Step 12. After your printout is done your screen should show the Main Menu. If not, press "Esc" to go to the Main Menu. Type "5" at Selection Number and press the "Enter" key. Tab to the Expanded size area and replace the "N" with a "Y". Press the "Enter" key twice. The printer will now print your graph in enlarged form and will turn in sideways on the paper. If you thought the other graph was slow, just wait, this one is even slower!

Step 13. Press "Esc" to return to the Main Menu. Now we will change the graph from a bar chart to a line graph. Type "2" and press "Enter". When the Define Chart Menu appears move the cursor to the where the "Type" shows the word "Bar". Change the word "Bar" to "Line" in each of the four lines under type. Press the "Enter" key to go to the Main Menu. At the Main Menu, type "3" to see your new chart. Press " Esc" when you are finished looking at this chart. If you would like go to the Define Chart menu and change the "Line" to "Pie" under the type category and display that chart. One other option is also available and that is the %Pie chart. Try that option to get a different look of a pie chart.

Step 14. Hand in the charts that you have printed to demonstrate your understanding of Graphing Assistant.

PRESENTATION GRAPHICS AND ANALYTICAL GRAPHICS

CONTRIBUTOR:
Judy Joyce
Red Creek High School
Red Creek, NY 13074

Objectives:

- The student will distinguish between presentation graphics and analytical graphics and will generate examples of each.

Procedures:

- PRESENTATION GRAPHICS: Load PC-Page into the computer and use the menu options to produce a poster similar to the examples (shown on handout).
- ANALYTICAL GRAPHICS: Load Drawman into the computer and take the data from Problem 1 to set up a cluster bar graph. Complete Problems 2 and 3.

Materials needed:

- Handout: WORKING WITH PRESENTATION AND ANALYTICAL GRAPHICS
- PRESENTATION GRAPHICS: PC-Page software for IBM PCs
- ANALYTICAL GRAPHICS: Drawman software for IBM PCs
- Microcomputer and graphics printer
- Graphics Adapter Card for microcomputers

Comments:

- Printshop or Printmaster can be used for the presentation graphics. The analytical graphics can be done with SuperCalc 4, Lotus 1-2-3, or any other software that has a graphics feature.
- Student posters can be placed on bulletin board as a recruitment tool for business courses. This has proven to be an effective communication tool and an "eye catcher" for our department.

Terminology:

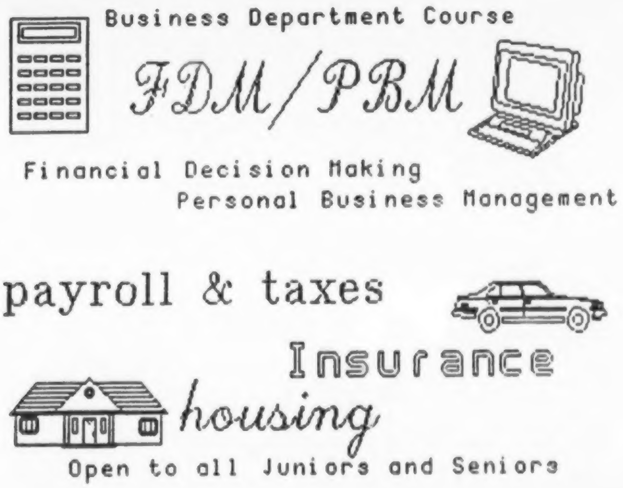
- Presentation Graphics--Graphics that take the form of pictures.
- Analytical Graphics--Graphics such as bar charts, pie charts, and line graphs (business graphics).

WORKING WITH PRESENTATION AND ANALYTICAL GRAPHICS

PRESENTATION GRAPHICS

Directions: Use presentation graphics software to produce a poster similar to the examples given. Your teacher will give additional suggestions.

REDUCED PRESENTATION GRAPHICS EXAMPLES



Business Department Course

FDM/PBM

Financial Decision Making

Personal Business Management

payroll & taxes

Insurance

housing

Open to all Juniors and Seniors

ANALYTICAL GRAPHICS

Directions: Use analytical graphics software to complete the problems below.

Problem 1:

The junior Class at Red Creek is selling t-shirts to raise money for the prom. After four days, the sales are as follows:

Day 1	$ 90
Day 2	$110
Day 3	$ 80
Day 4	$ 70

Set up a cluster bar graph to show the above. Label the graph "T-SHIRT SALES." Label the "x" axis "When Sold" and the "y" axis "Sales." Use a bottom legend of "CLASS OF 'XX" filling in your graduation class year.

Problem 2:

Using the same information given above, create a pie graph showing each day's sales. Label appropriately.

Problem 3:

Using the information in Problem 1, create a line graph (with the points connected).

DESIGN LETTERHEAD STATIONERY

CONTRIBUTOR:
Phyllis Lentz
Edgewater High School
Orlando, FL 32804

Objectives:

- The student will use a word processing software package and/or a graphics package to design a company letterhead that includes a logo.

Procedures:

- Review with the students the information about the business that is needed on a letterhead. Use handout: SAMPLE STUDENT-GENERATED LETTERHEADS.
- Have students use a software package, such a PrintShop, to design a company's letterhead, with a logo.
- Demonstrate how to change the printer setup for either fanfold paper or single-sheet paper.

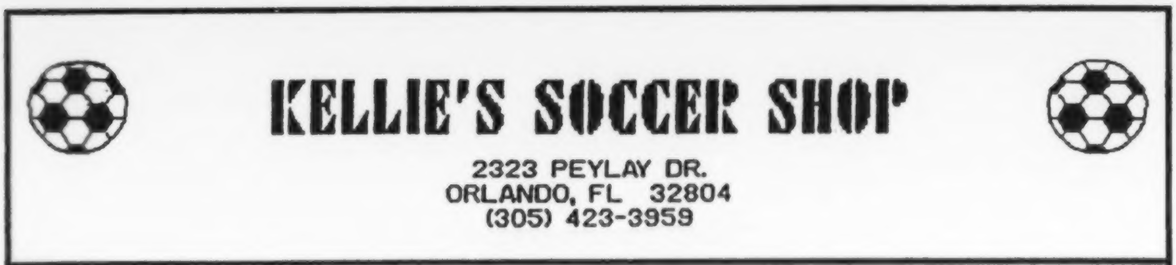
Materials needed:

- Handout: SAMPLE STUDENT-GENERATED LETTERHEADS
- PrintShop or a software package that would allow the students to create computer graphics for the letterhead and logo
- Computer with graphic capabilities
- Printer (dot matrix or laser) with graphic capabilities

Comments:

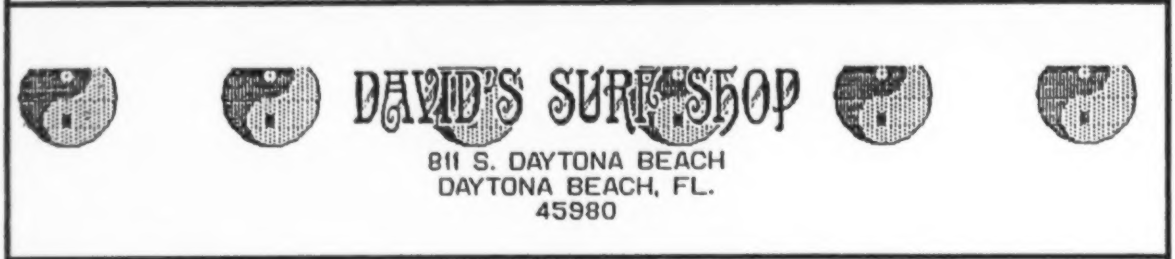
- A simple way we added some excitement to the production of word processing documents was to have students print their letters on letterheads they designed themselves. The students enjoyed this creative process. The company names, addresses, slogans, and logos were usually pretty wild. The students seemed to take more care in their document preparation when the printing was to be done on their company letterheads. Also, the students were proud that their work was displayed on a bulletin board for other students to admire.

SAMPLE STUDENT-GENERATED LETTERHEADS



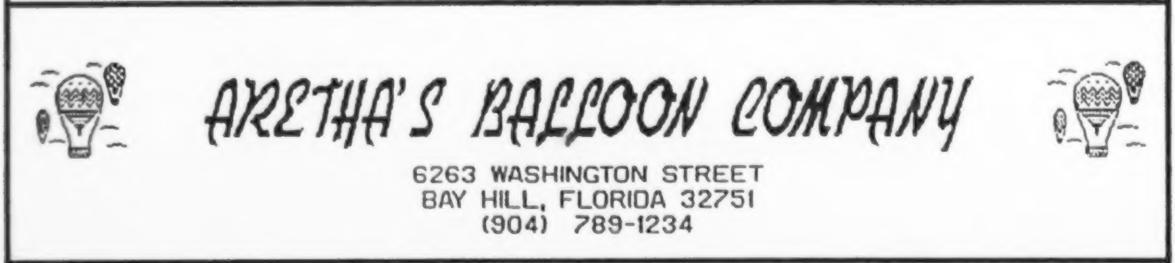
KELLIE'S SOCCER SHOP

2323 PEYLAY DR.
ORLANDO, FL 32804
(305) 423-3959



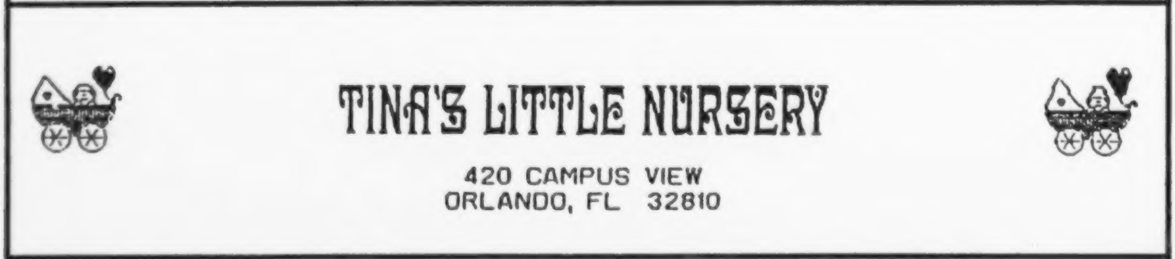
DAVID'S SURF SHOP

811 S. DAYTONA BEACH
DAYTONA BEACH, FL.
45980



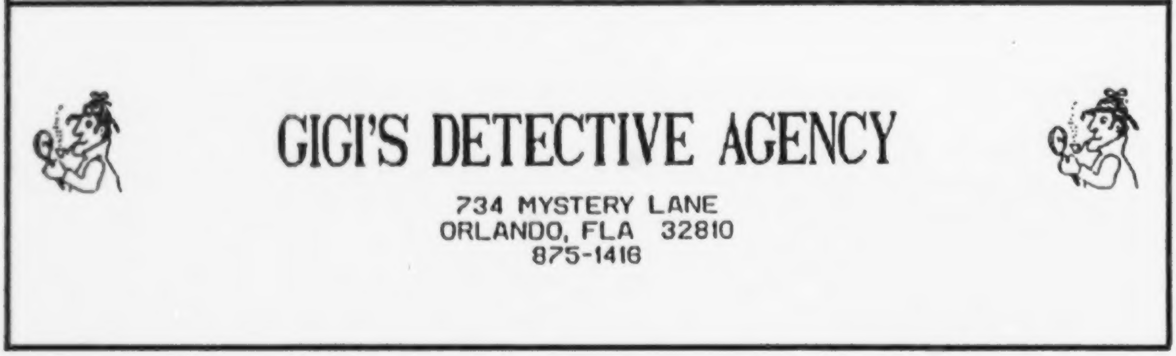
ARETHA'S BALLOON COMPANY

6263 WASHINGTON STREET
BAY HILL, FLORIDA 32751
(904) 789-1234



TINA'S LITTLE NURSERY

420 CAMPUS VIEW
ORLANDO, FL 32810



GIGI'S DETECTIVE AGENCY

734 MYSTERY LANE
ORLANDO, FLA 32810
875-1416

COMPUTER-GENERATED BULLETIN BOARDS

CONTRIBUTOR:
Irma Nielsen
Kinder High School
Kinder, LA 70648

Objectives:

- The student will use a graphics package to produce course-related bulletin boards.

Procedures:

- Obtain a graphics package that is compatible with your hardware.

- Select an appropriate topic, theme, or title for the bulletin board (See SAMPLE COMPUTER-GENERATED BULLETIN BOARDS.

- Use a graphics package to design the bulletin board.

Materials needed:

- PrintShop or a similar graphics package that is compatible with available hardware.

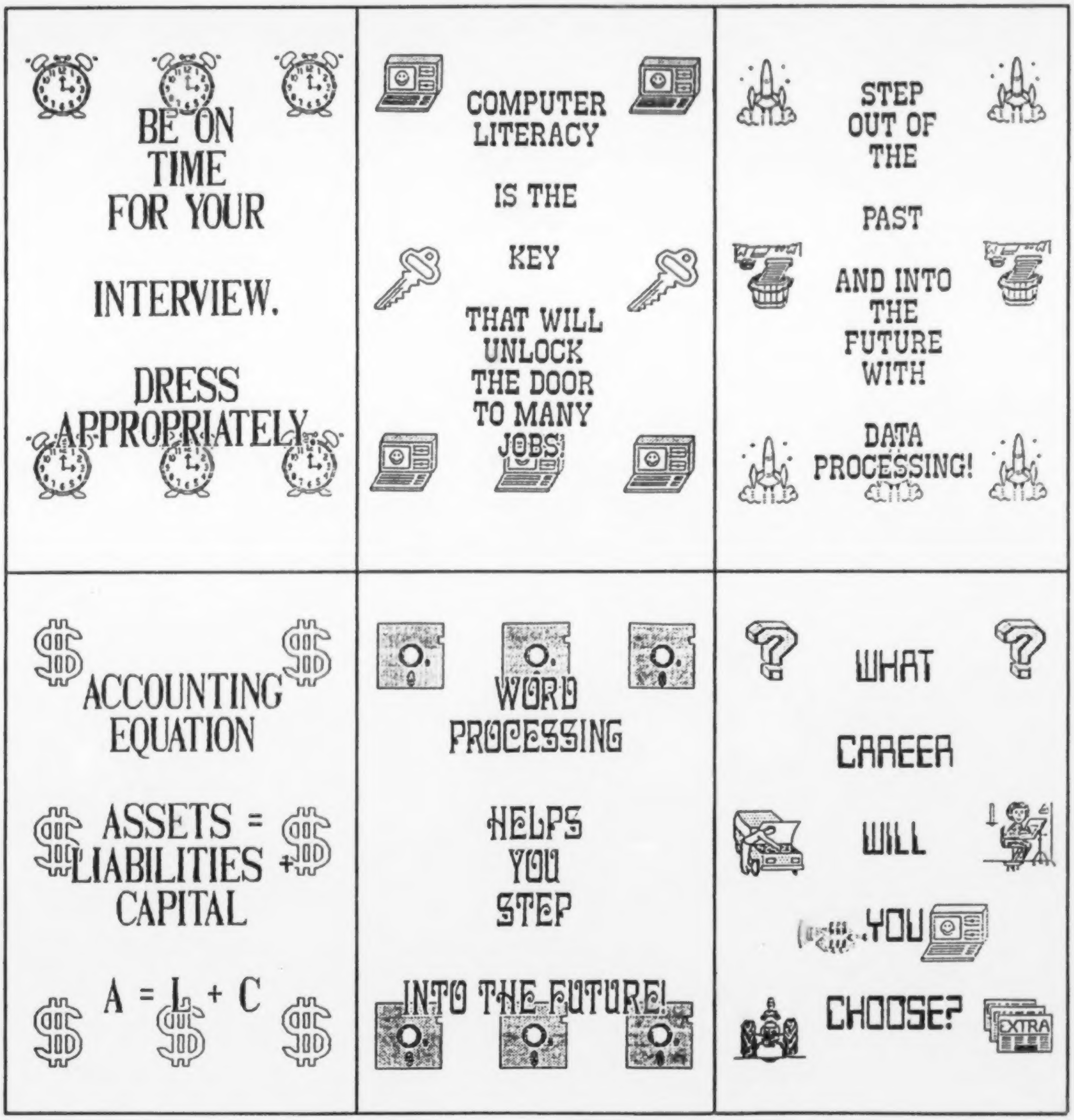
- Border paper or trim for the bulletin board.

Comments:

- This is a project that students and teachers can use to build a file of useful bulletin board ideas.

- Teachers can make bulletin board posters by using the PrintShop disk by Broderbund, 17 Paul Drive, San Rafael, CA 94903-2101.

SAMPLE COMPUTER-GENERATED BULLETIN BOARDS


BE ON TIME FOR YOUR INTERVIEW.
DRESS APPROPRIATELY
COMPUTER LITERACY IS THE KEY THAT WILL UNLOCK THE DOOR TO MANY JOBS!
STEP OUT OF THE PAST AND INTO THE FUTURE WITH DATA PROCESSING!
ACCOUNTING EQUATION
ASSETS = LIABILITIES + CAPITAL
A = L + C
WORD PROCESSING HELPS YOU STEP INTO THE FUTURE!
WHAT CAREER WILL YOU CHOOSE?
EXTRA

DEMONSTRATION OF ANALYTICAL COMPUTER (BUSINESS) GRAPHICS

CONTRIBUTOR:
Ivan Wallace
East Carolina University
Greenville, NC 27858-4353

Objectives:

- The student will use a spreadsheet software package to prepare a bar chart and/or pie chart.

Procedures:

- Use this demonstration as part of your introduction to this exercise. As you key in the data, write (or have one of your students write) the step-by-step procedures to complete the graphics on the board.
  - -- Type the following data in Row 1, putting each set of data in a different cell: Hardware, Software, Other.
  - -- Type the following data in Row 2: 3000, 2500, 1200.
  - -- Next, using the graphics or data option, have the software generate titles, A1.C1 and the range of data A2.C2.
  - -- Generate the graph on the screen or printer as a bar graph or pie chart.
- Distribute the handout to students and discuss assignment. Answer any questions about the assignment or the software procedure. Instruct students to make notes on the handout to document the steps they take to produce the graphics. (This helps the teacher diagnose problems.)

Materials needed:

- Handout: BUSINESS GRAPHICS
- Any spreadsheet software that does graphics
- Educational versions of SuperCalc 3 or 4 and The Twin can be used as well as Lotus 1-2-3.

Terminology:

- Landscape - Horizontal format for a page. (The information is printed on the page to be read with the page turned sideways.)
- Portrait - Vertical format for a page. (The information is printed on the page in a normal format.)

BUSINESS GRAPHICS

Directions: Using the following information, create a graphic form for each situation given below. Each graphic illustration should show any information necessary to make the work easily understood, such as headings, labels, legends, etc.

Situation #1: Use a landscape format and create as a line chart.

Sales for Alpha Computer Company were as follows:

1980 - $ 80,000
1981 - $ 90,000
1982 - $ 70,000
1983 - $ 60,000
1984 - $ 80,000
1985 - $ 50,000
1986 - $100,000

Situation #2: Use a portrait format and create as a bar chart.

Software and hardware sales for Alpha Computer Company were as follows:

1983 - $50,000 hardware and $30,000 software
1984 - $60,000 hardware and $30,000 software
1985 - $30,000 hardware and $40,000 software
1986 - $35,000 hardware and $45,000 software

Situation #3: Create as a bar or pie chart.

The budget for QMS will be spent as follows:

$12,000 on computer hardware
$ 9,000 on office equipment
$ 6,000 on computer software
$ 9,000 on office furniture

Integrated Software

Category 12E

ALTERNATIVE FOR "BY THE BOOK" IN LEARNING APPLICATIONS SOFTWARE

CONTRIBUTOR:
Robert J. Herring
Encampment High School
Encampment, WY 82325

Objectives:

- The student will use word processing to process an individual handbook of commands, techniques, and terminology necessary to master an integrated software package.

Procedures:

- Present the word processing section first. From assignments, students gain practical application preparing documents writing text. Students then write a manual or tutorial on how to use the word processing portion.
- Present spreadsheets next and assign problems and applications. At the end of this unit students again use word processing to complete a section on spreadsheets for their manual or tutorial.
- Present data base last. When data base is understood, have students complete that section of their manual.
- Assign a project to integrate all three applications such as keeping inventory and billing information on a spreadsheet, names and records of individuals on a data base, and form letters on the word processor.
- Have students write a section for the manual or tutorial for the integrated applications.

Materials needed:

- Any integrated software package

Comments:

- If textbooks are not available, the teacher presents the functions of the software, demonstrates, and "talks" students through the steps dealing with specific functions and procedures.
- If students forget how to do something, they have a ready manual or tutorial available to them.
- This project could be completed using separate software packages.

Terminology:

- Integrated software--a software package that includes several software applications in one package such as word processing, spreadsheet, and data base.

AUTOMOTIVE SURVEY AND ANALYSIS

CONTRIBUTOR:
Cheryl Nefflen
Randolph County Vocational Technical Center
Elkins, WV 26241

Objectives:

- The student will participate in the development of forms, collection of data, use of computer software, and preparation of written reports to complete a survey of automotive use and condition.

Procedures:

- Discuss the overall project with the students. Basically, students make a survey of the MAKE, YEAR, MODEL, and CONDITION of cars in the faculty and/or student parking lot(s). Students use word processing software to input information; spreadsheet and data base functions (arrange, sort, tally, etc.) to manipulate data; and printed graphics to show selected relationships.
- Assist students as needed in designing their survey instruments, collecting the data, using appropriate computer software to analyze the data, and preparing final reports.
- Allow students to make as many of the decisions as they can. Sample decisions to be made by students:
  - -- What final reports should be prepared:
    - General report of the project
    - Listings and sorts
    - Charts and graphs to show selected relationship
  - -- What specific information are they going to collect
  - -- Format of the data collection instrument
  - -- How will data be collected (by teams, individuals assigned to specific areas, etc.)
  - -- Who prepares and duplicates the data collection instrument
  - -- How (software program) will data be keyed into the computer
  - -- What sorts and listings are needed of the data
  - -- Which charts and graphs should be used to show desired relationship
  - -- Format of final report

Materials needed:

- This project was completed with TMAKER INTEGRATED SOFTWARE. Any integrated software could be used, however.

Comments:

- Business students could work with students from the automotive curriculum to provide a "Spring Check-Up." Automotive students could check and collect data on various items (tires, air-conditioning, brake fluid, etc.). Business students could use the data to prepare individual status reports to car owners.

RESEARCH VIA COMPUTER

CONTRIBUTOR:
Linda Osborne
Live Oak Elementary
San Antonio, TX 78148

Objectives:

- The student will research a subject and collect notes by using a data base. The notes will then be ordered and combined to produce a written report.

Procedures:

Students should follow a uniform procedure for completing their reports:

- Choose a topic to research.
- Research the topic for important facts and take notes.
- Use a data base software program to set up an information file and save to the file.
    a. Use research topic for file title.
    b. Organize notes in categories so as to set up the fields of the records.
    c. Key in the research data on the records.
    d. Print out data files according to subtopics.
- Based on research facts saved to the data base file, write the report.
- Use a word processor software program to key the report.
- Edit the report and print a hard copy.
- Create a report cover using a graphic design program.
- Prepare and attach the cover.

Materials needed:

- Any integrated software program
- Graphic design software program (optional)

Comments:

- This project could also be completed using separate software packages.

Desktop Publishing

Category 12F

HANDOUTS FOR OBJECT-ORIENTED VERSUS BIT-MAPPED GRAPHICS

CONTRIBUTOR:
Kenneth Auvil
San Jose State University
San Jose, CA 95192

Objectives:

- The student will understand the difference between object-oriented and bit-mapped graphics.

Procedures:

- Use the handouts to explain the difference between bit-mapped and object-oriented graphics.

Materials needed:

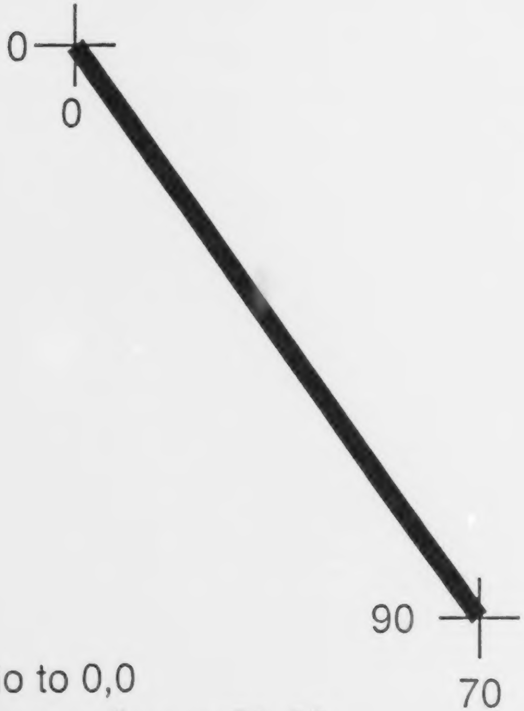
- Handouts (four pages): TWO KINDS OF GRAPHICS: OBJECT-ORIENTED (VECTOR) VERSUS BIT-MAPPED

Comments:

- The distinction between Object-oriented and Bit-mapped graphics is important in graphics and desktop publishing software because it influences the creation of the graphic, storage of the graphic in memory and on the disk, and the printing of the graphic.

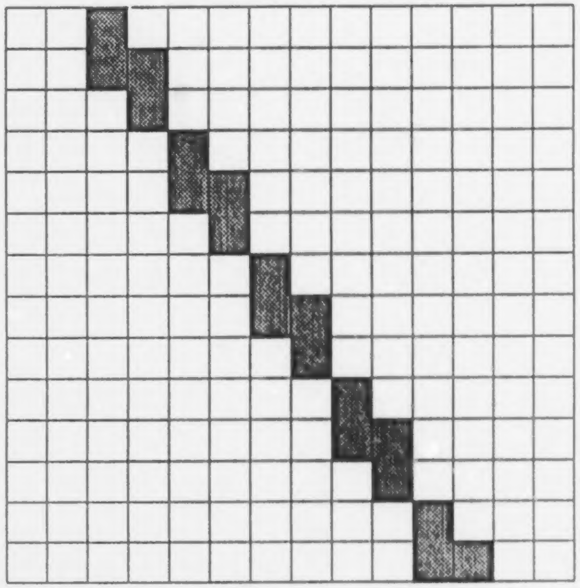
TWO KINDS OF GRAPHICS

Object-Oriented (Vector)



Go to 0,0
Draw a line to 70,90

Bit Mapped



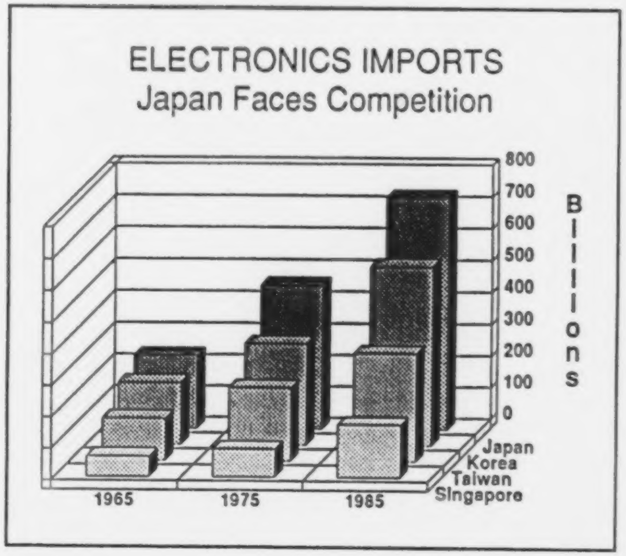
Instructions must be given for each pixel: OFF or ON.

Mary Auvil, Middlefield Campus, Foothill College, Palo Alto, CA

TWO KINDS OF GRAPHICS

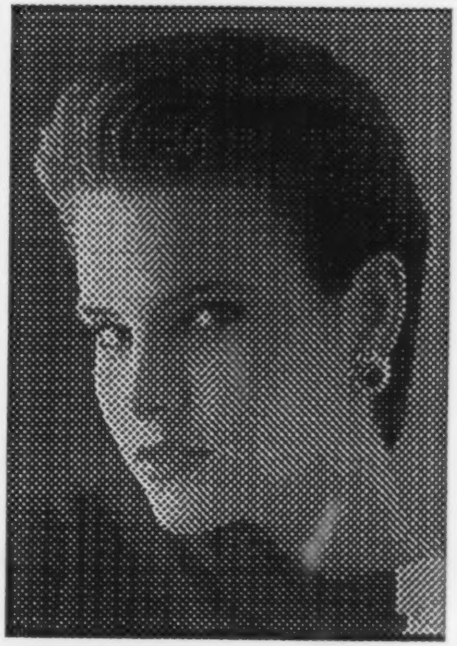
Object-Oriented (Vector)

"Line-Art" Format



Bit Mapped

"Image" Format



Examples printed with the permission of Ventura Software, Inc.

TWO KINDS OF GRAPHICS

Object-Oriented (Vector)

"Line-Art" Format

Take less memory

Print faster

Cleaner lines (less "jaggies")

Shapes are geometric or based upon geometric shapes

Resolution depends upon printer

Bit Mapped

"Image" Format

Require more memory

Take longer to print

Capable of "freehand" drawing, "shaded" images

Resolution depends upon graphics screen and printer

TWO KINDS OF GRAPHICS

Object-Oriented (Vector)

"Line-Art" Format

DRAW programs
CAD programs
LOTUS 1-2-3 graphs
MAC PICT files
Illustrator, Cricket Draw, etc.
SuperPaint Draw Layer

PostScript files

Bit Mapped

"Image" Format

PAINT programs
PC PAINTBRUSH
Dr. HALO
MAC Paint
SuperPaint Paint Layer

Scanned Images

Mary Auvil, Middlefield Campus, Foothill College, Palo Alto, CA

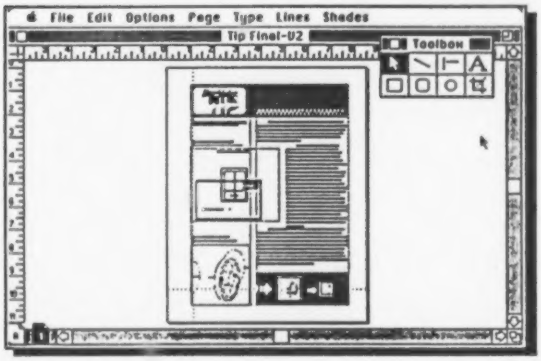
PAGEMAKER TIPS:
CALLING THE SCREEN SHOTS

CONTRIBUTOR:
Kenneth Auvil
San Jose State University
San Jose, CA 95192

PageMaker. TIP

Calling the Screen Shots

If you should need to capture the image of the entire Macintosh screen, including the title bar, scroll bars and any palettes or icons that may be showing, a simple routine is available for this purpose. Holding down the command key and the shift key while you type the number 3 will duplicate the current contents of the screen as a MacPaint document. From the MacPaint document it may be transferred directly into PageMaker with the *place* command and reduced to the size needed. The large pasteboard in PageMaker will also allow further work on the image before or after it is moved to the publication page.



PageMaker 2.0 has a feature that greatly improves the appearance of paint-type graphics when they need to be resized. The program supplies standard reductions and enlargements that resizes in increments that provide the best appearance for bit-mapped graphics to be printed on higher resolution printers such as the Laserwriter. Shading screens are especially susceptible to distortion or developing moire patterns when resized. To obtain optimal printed results, simply hold down the command key while resizing the graphic on the screen (command-shift keys if you wish to retain the same proportion as the original). As you resize the graphic, the resize outline or the image will "snap to" the next smaller or larger increment.

If, for any reason, you need to create the type font used for menus and dialog boxes for most applications, the font to select is one of the standard system fonts found in all Macintosh type menus or type specification boxes, 12 point Chicago. The apple icon used for the Apple menu is available on all Laserwriter or Laserwriter +™ resident fonts, such as Times and Helvetica, by holding down the shift and option keys while typing the letter K. It is also available on the Mobile graphic font by typing the lower case "t."

PAGEMAKER TIPS:
GETTING AROUND IN THE PASTEBOARD

CONTRIBUTOR:
Kenneth Auvil
San Jose State University
San Jose, CA 95192

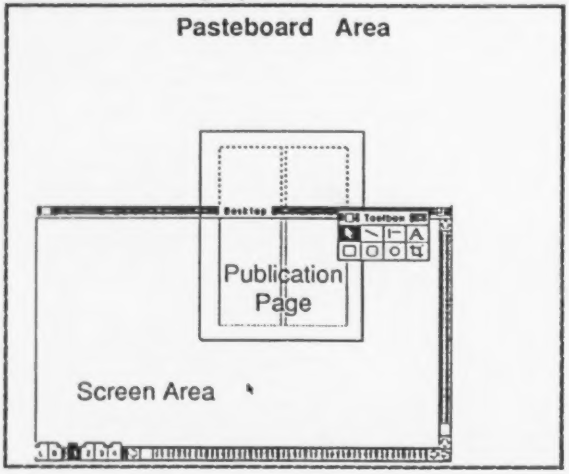
PageMaker TIP

Getting Around in the Pasteboard

Prepared especially for the Desktop Publishing class, CIS 116, during the Spring Quarter, 1987, by Kenneth W. Auvil using PageMaker 2.0. Most of the art and text is original, although the methods are documented in the PageMaker manuals.

The pasteboard is that area of the screen surrounding the outline of the page, whether you are showing only one page at a time or a two page spread. The pasteboard is considerably larger than the screen. To see hidden areas of the pasteboard, use the grabber hand or the scroll bars to move around and beyond the default screen area.

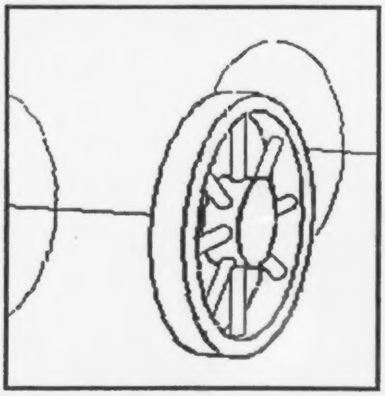
The screen area can be moved around the much larger pasteboard.

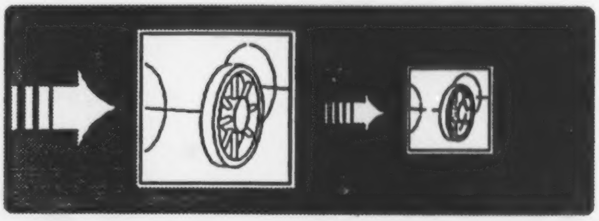


Having a large space of blank pasteboard showing on the screen is a considerable advantage in the layout of your publication pages if you are using numerous graphics or separate blocks of text. You can, for example, assemble all the graphics and all the text blocks on the pasteboard and move them to the publication page as needed. A typical procedure: place all the graphics on the pasteboard and start the flow of text onto the publication page, then roughly size each graphic as needed and place on the publication page, adjusting the final dimensions in place. Blocks of text, once established within the column widths, can also be moved on and off the page, or adusted in length within the page. The pasteboard has about three times the area of a single publication page, so there is plenty of room to store graphic and text units and to do some work on them in that location.

Another advantage of a large pasteboard space is that you can import large graphics from other applications, even whole pages, and do the resizing on the pasteboard. This works extremely well with bit-mapped graphics, which may be drawn oversize in their paint programs, placed on the pasteboard, then reduced. If printing with a high resolution printer, such as the Laserwriter™, the number of dots defining the orginal image will be retained, which at a reduced scale will appear as a finer resolution image. A 50% reduction of an image that has 72 dots per inch will print as one with 144 d.p.i.

A bit-mapped graphic at its original size and the reductions.





LETTERHEAD CREATION (PRINTSHOP)

CONTRIBUTOR:
Irma Nielsen
Kinder High School
Kinder, LA 70648

Objectives:

- The student will learn to create letterhead stationery that can be used for business letters.

Procedures:

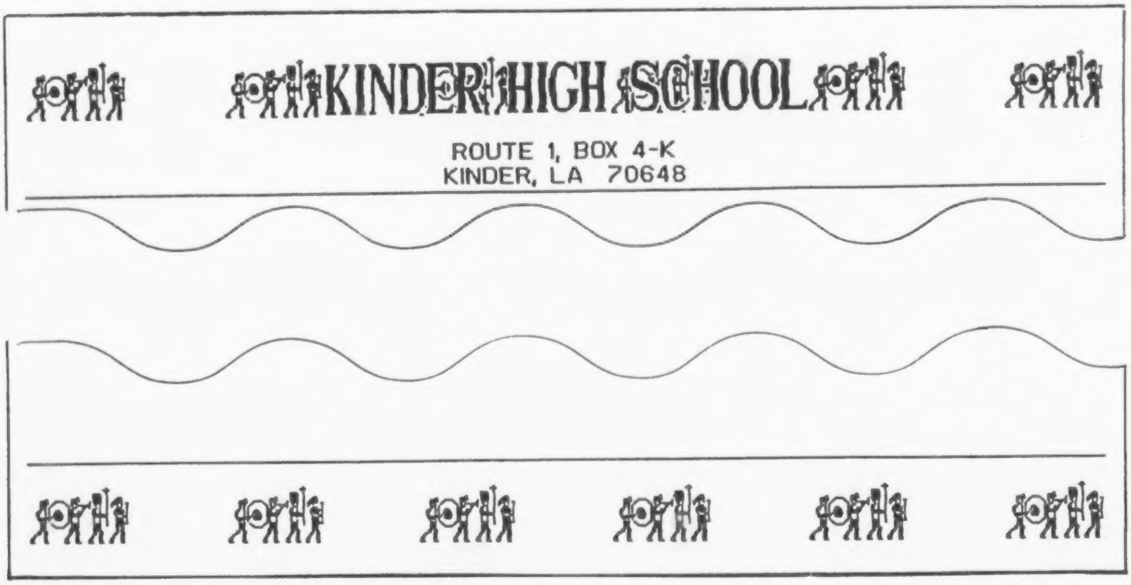
- Load the PrintShop software program into the computer. Select "letterhead." Follow the directions given in the software program.

Materials needed:

- PrintShop software package or other software package that allows students to mix text and graphics.

Comments:

- The school or business department could hold a contest to select the best student letterhead design. That design could be used for class assignments as well as outside correspondence. Place the designs on a school bulletin board and have the students select the best design. Packets of stationery with the winning letterhead could be sold at the school store.



KINDER HIGH SCHOOL

ROUTE 1, BOX 4-K
KINDER, LA 70648

DEMONSTRATION OF DESKTOP PUBLISHING

CONTRIBUTOR:
Ivan Wallace
East Carolina University
Greenville, NC 27858-4353

Objectives:

- The student will understand how text and graphics are placed and "sized" using specialized desktop publishing software.

Procedures:

- Using a paint or draw graphics program, create a file and put some circles, squares, or other "artwork" in it. (Doesn't have to be fantastic--anything that you create will work.)

- Using any word processor, create two text files by keying a short paragraph from any material in each file.

- Using PageMaker or any other desktop publishing software, set up a page and format it for two columns. Then tell the software to place the three files in the columns. Use the "tools" options to resize the graphics and move it. Put a block of text in each column and then tell it to change type sizes and fonts.

Materials needed:

- Apple McIntosh computer with PageMaker or Ready-Set-Go software and MacPaint, MacDraw, and MacWrite.

or

- IBM computer or compatible with 680k memory and a hard disk and PageMaker software and Microsoft Windows software.

Networking

Category 13

This page left blank intentionally.

Category held open for future contributions.

Telecommunications/ Electronic Mail

Category 14

BASIC TELECOMMUNICATIONS CONCEPTS

CONTRIBUTOR:
Mary Auvil
Foothill College
Middlefield Campus
Palo Alto, CA 94303

Objectives:

- The student will learn basic telecommunications concepts by studying and discussing the BASIC TELECOMMUNICATIONS CONCEPTS handouts.

Procedures:

- Use the handouts listed below as study aids.

Materials needed:

- Handouts on following pages:

BASIC TELECOMMUNICATIONS CONCEPTS
THE LANGUAGE: ASCII
THE PROCESS
8 BITS MOVE IN PARALLEL
PARAMETERS REQUIRED FOR TELECOMMUNICATION
FILE TRANSFER
ECHO AND DUPLEX

Comments:

- The classroom teacher will find the handouts an effective visual aid in helping students understand basic telecommunication concepts.

- The handouts are of high-quality and can be a significant time-saving tool for the teacher.

- The handouts may also be used as transparencies.

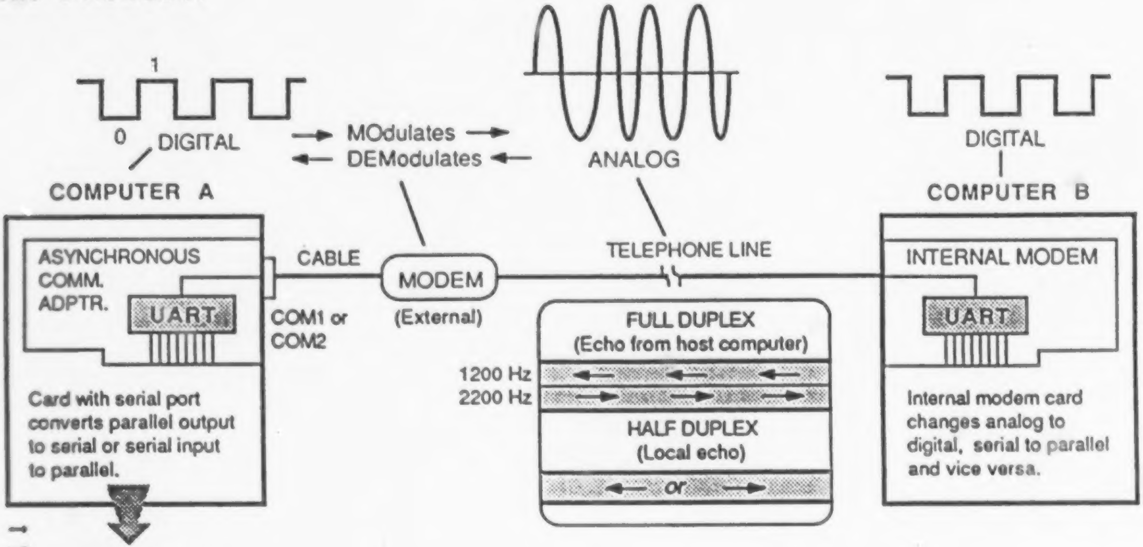
BASIC TELECOMMUNICATIONS CONCEPTS

The LANGUAGE:

ASCII (American Standard Code for Information Interchange)
Number codes standing for alphanumeric characters

	DECIMAL		BINARY
ASCII codes go from	0 to 127	(7 bits)	0000000 to 1111111
Extended codes go from	128 to 255	(8 bits)	10000000 to 11111111
A	= 65		1000001
B	= 66		1000010
C	= 67		1000011

The PROCESS:


1
0
DIGITAL
MOdulates
DEModulates
ANALOG
DIGITAL
COMPUTER A
COMPUTER B
ASYNCHRONOUS COMM. ADPTR.
UART
CABLE
COM1 or COM2
MODEM
(External)
TELEPHONE LINE
FULL DUPLEX
(Echo from host computer)
1200 Hz
2200 Hz
HALF DUPLEX
(Local echo)
or
INTERNAL MODEM
UART
Card with serial port converts parallel output to serial or serial input to parallel.
Internal modem card changes analog to digital, serial to parallel and vice versa.

Parallel : Data bits are transmitted simultaneously, each on its own line.

Serial: Data bits are transmitted one after another on a single line.

PARAMETERS required for telecommunication:

SPEED	Baud rate	300-9600 bps
ERROR CHECKING	Parity	None, Even, or Odd
CHARACTER LENGTH	Number of data bits	7 or 8 bits
SEPARATORS	Number of stop bits	1 or 2 bits

Examples:	BBS, Point-to-Point	1200, N, 8, 1
	Hardwired Computers	9600, N, 8, 1
	Data Retrieval Services	1200, N, 7, 1

Mary Auvil

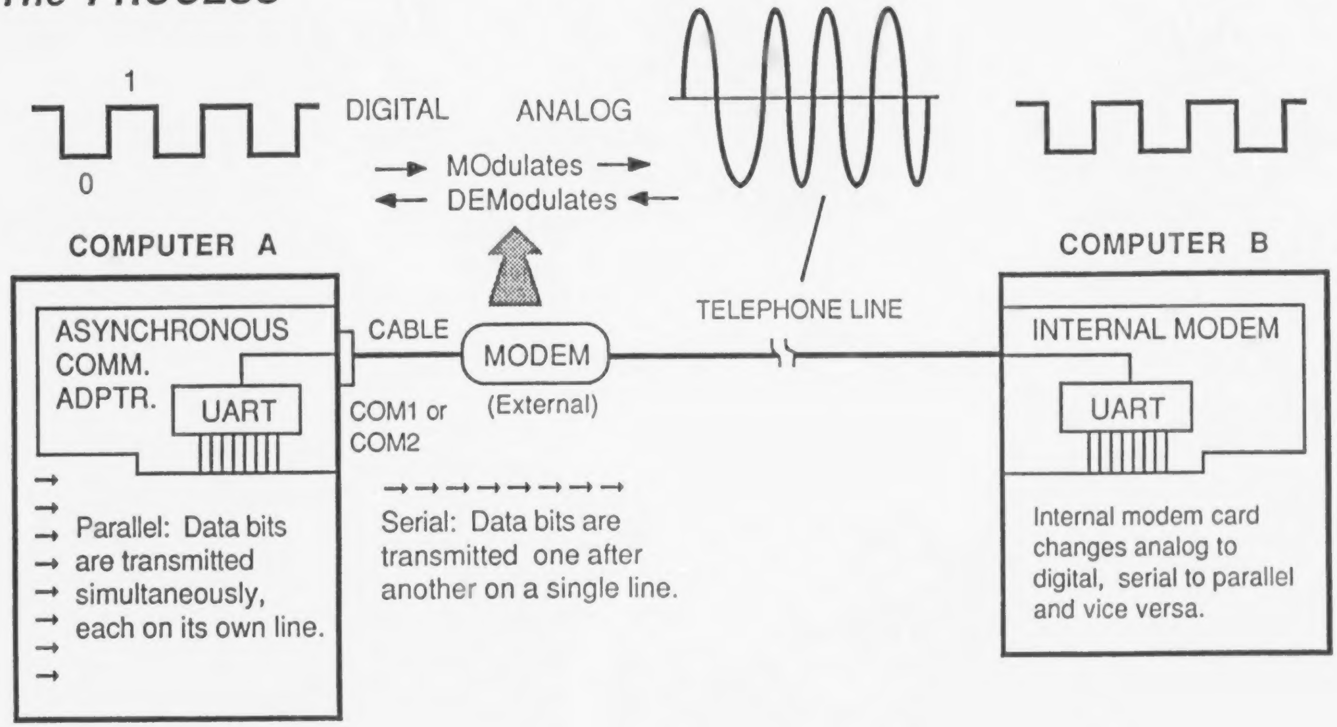
The LANGUAGE:

ASCII (American Standard Code for Information Interchange)

Number codes standing for alphanumeric characters

		DECIMAL		BINARY
ASCII codes go from		0 to 127	(7 bits)	0000000 to 1111111
	A	= 65		1000001
	B	= 66		1000010
	C	= 67		1000011
Extended codes go from		128 to 255	(8 bits)	10000000 to 11111111
	⊥	= 193		11000001
(Standard for IBM and compatibles)	β	= 225		11100001
	±	= 241		11110001

The PROCESS



1

0

DIGITAL

ANALOG

→ MOdulates →

← DEModulates ←

COMPUTER A

ASYNCHRONOUS
COMM.
ADPTR.

UART

CABLE

COM1 or
COM2

MODEM

(External)

TELEPHONE LINE

COMPUTER B

INTERNAL MODEM

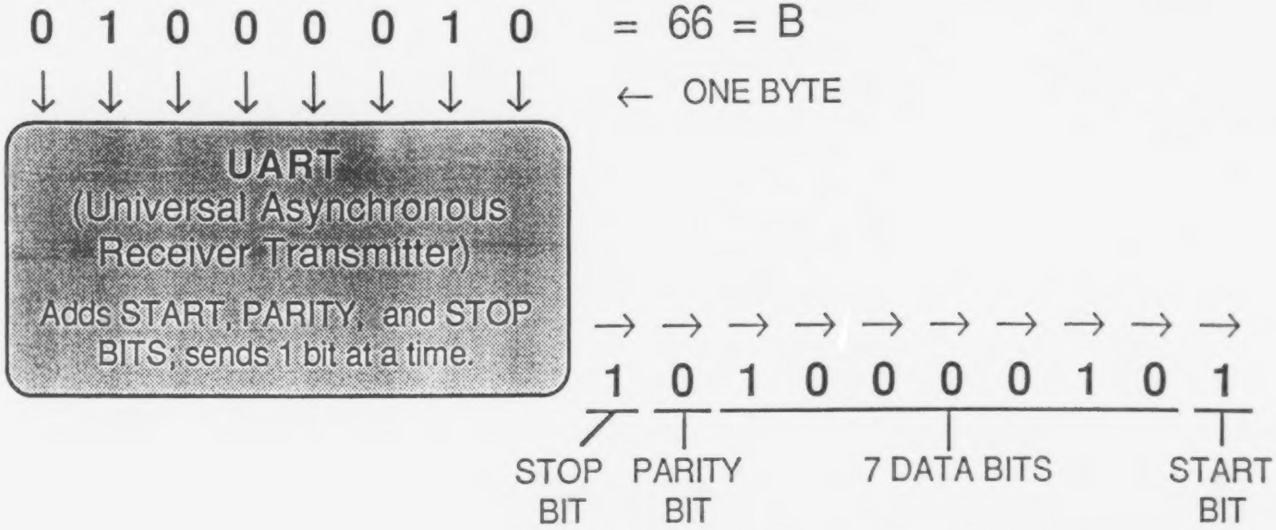
UART

Parallel: Data bits are transmitted simultaneously, each on its own line.

Serial: Data bits are transmitted one after another on a single line.

Internal modem card changes analog to digital, serial to parallel and vice versa.

8 BITS (↓) move in PARALLEL, 1 BYTE at a time, inside the computer.



0 1 0 0 0 0 1 0 = 66 = B

↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ← ONE BYTE

UART
(Universal Asynchronous Receiver Transmitter)

Adds START, PARITY, and STOP BITS; sends 1 bit at a time.

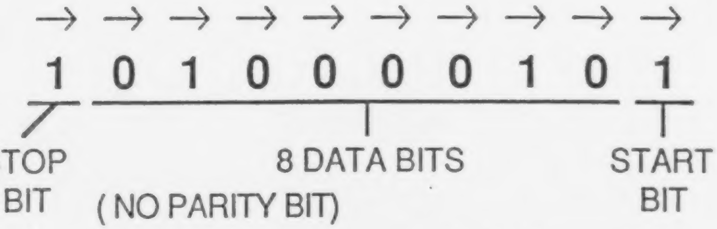
→ → → → → → → → → →

1 0 1 0 0 0 0 1 0 1

STOP BIT | PARITY BIT | 7 DATA BITS | START BIT

300, E, 7, 1 = PARAMETERS

ANOTHER COMMON CONFIGURATION:



→ → → → → → → → → →

1 0 1 0 0 0 0 1 0 1

STOP BIT | 8 DATA BITS (NO PARITY BIT) | START BIT

1200, N, 8, 1 = PARAMETERS

PARAMETERS required for telecommunication:

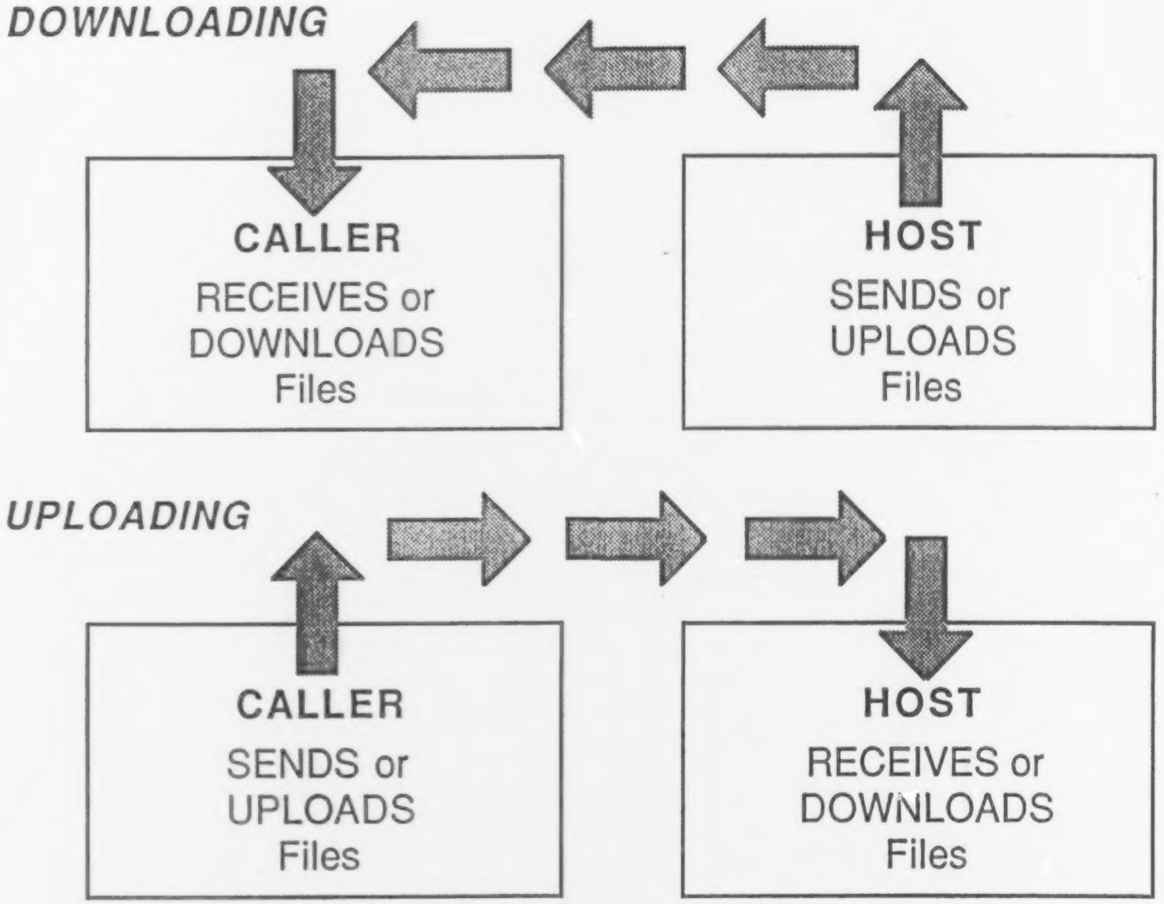
SPEED..................	Baud rate	300-9600 bps
ERROR CHECKING.....	Parity	None, Even, or Odd
CHARACTER LENGTH...	Number of data bits	7 or 8 bits
SEPARATORS...........	Number of stop bits	1 or 2 bits

1200, N, 8, 1 — STOP BIT

BAUD PARITY DATA BITS

Examples:		
	BBS, Point-to-Point	1200, N, 8, 1
	Hardwired Computers	9600, N, 8, 1
	Data Retrieval Services	1200, N, 7, 1

FILE TRANSFER



DOWNLOADING

CALLER
RECEIVES or
DOWNLOADS
Files

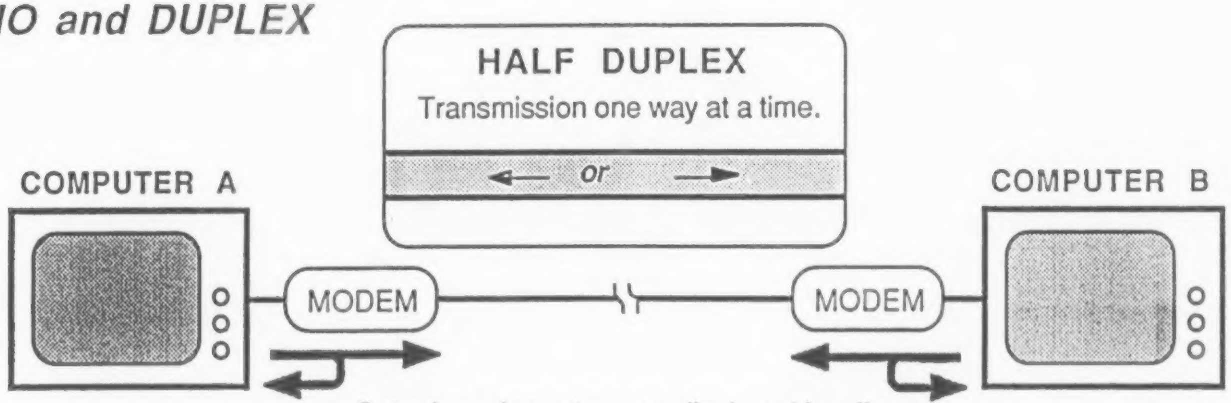
HOST
SENDS or
UPLOADS
Files

UPLOADING

CALLER
SENDS or
UPLOADS
Files

HOST
RECEIVES or
DOWNLOADS
Files

ECHO and DUPLEX

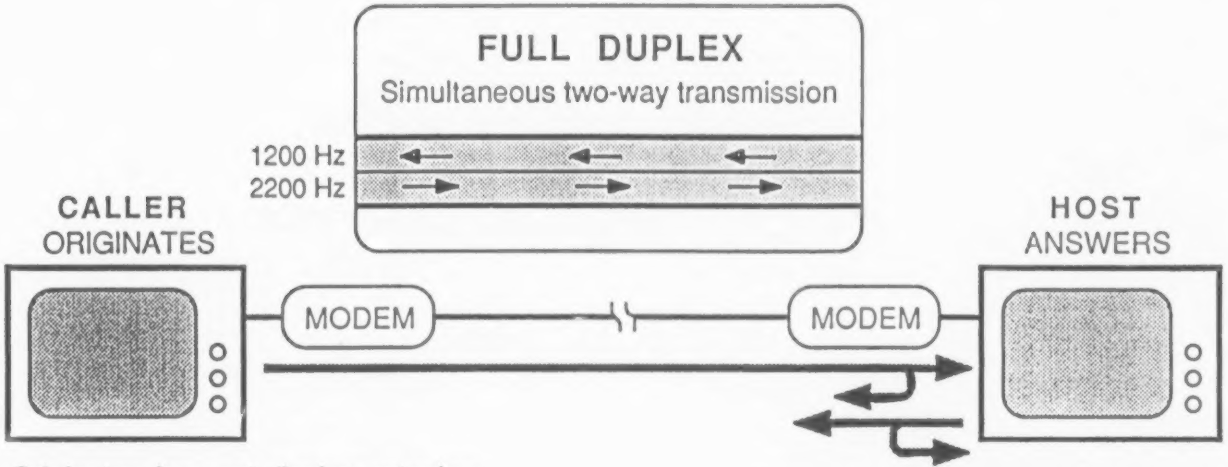


HALF DUPLEX

Transmission one way at a time.

← or →
COMPUTER A
MODEM
MODEM
COMPUTER B

Outgoing characters are displayed locally.
Incoming are not echoed to sender.



FULL DUPLEX

Simultaneous two-way transmission

1200 Hz
2200 Hz
CALLER
ORIGINATES
MODEM
MODEM
HOST
ANSWERS

Originator does not display outgoing.
Originator does not echo incoming to host.

Host echos incoming to originator.
Host displays outgoing locally.

TELECOMMUNICATIONS MODULES, TESTS, RESOURCES

CONTRIBUTOR:
Jefferson C. Boyce
Microcomputer Education Consultant
Santa Maria, CA 93455

Objectives:

- The objectives for individual modules are listed with the course outlines:

INTRODUCTORY LEVEL MODULE
BEGINNING-USER LEVEL MODULE
COMPETENT-USER LEVEL MODULE

Materials needed:

- At the introductory level, the student is introduced to a bulletin board simulation.
- At the beginning level and the competent level, students use an electronic mail system or an electronic mail simulation.

Comments:

- The telecommunications modules, tests, and resource listings are provided as aids to the teacher who is developing a telecommunications course of study.
- The modules provide objectives, subject topics, and instructor notes to develop units on telecommunication at the following levels:

INTRODUCTORY LEVEL MODULE
BEGINNING-USER LEVEL MODULE
COMPETENT-USER LEVEL MODULE

- A TELECOMMUNICATIONS TEST is enclosed. (See page 15.) To determine if the student has mastered the vocabulary of telecommunications, the teacher can "send" the test to each student's electronic mailbox. The process of electronically obtaining the test and printing it will determine if the student can telecommunicate. (The students receive only the TELECOMMUNICATIONS TEST INSTRUCTIONS if they are to return the test electronically. If electronic retrieval is not possible, the teacher may photocopy only the test portion as shown.)

- SOME TELECOMMUNICATIONS SIMULATION SOFTWARE is an annotated compilation of simulation software and prices.
- SOME TELECOMMUNICATIONS RESOURCES is a basic listing of books, magazines, and newsletters to be used as background information, historical perspectives, procedural recommendations, industry trends, etc. Look for revised editions as they become available.
- Either electronic mail simulation or actual electronic mail systems may be used.

Key:

TELECOMMUNICATIONS TEST: (page 15)

1. E
2. J
3. B
4. C
5. M
6. H
7. A
8. O
9. I
10. D
11. F
12. L
13. K
14. G
15. N

TELECOMMUNICATIONS
INTRODUCTORY LEVEL MODULE

Objectives

Upon completion of this module, the student should be able to:

- define the terms ASCII, baud, BBS, bit, download, external modem, internal modem, on-line, parallel transmission, parity, password, public-domain program, serial transmission, sysop, telecommunications, terminal program, and upload.
- list five applications of telecommunications today.
- list equipment needed to telecommunicate.
- explain, orally or in written form, how information is sent and received using telecommunications.
- demonstrate, to the teacher's satisfaction, the ability to sign on to a real or simulated BBS, read bulletins, and sign off.

See Telecommunications Resources List for References and Teaching Aids.

Subject	Notes
What is telecommunications?	Define telecommunications.
How did telecommunications get started?	History--From Morse to Micros
What can we do with telecommunications today?	Start a list--students add to it.
	Clippings file.
The future	Start a list--students add to it.
Required hardware	Discuss microcomputer & modem.
Required software	Discuss software requirements.
Required telephone line	Discuss line requirements.

Introductory Level Module (continued)

How information is telecommunicated	Key points: electronic switches ones and zeros 8-bit characters baud rate information flow
What is a bulletin board?	Review BBS software.
What can bulletin boards do?	Ask if anyone has used a bulletin board. If so, for what purpose? Present and discuss posting messages uploading & downloading ethics computer games electronic mail others
How to use bulletin boards.	Introduce BBS simulation. Each student use simulation. Introduce local bulletin board (if available) Each student sign on to real or simulated bulletin board. Each student read at least one bulletin. Each student sign off.
Review bulletin board procedures.	

TELECOMMUNICATIONS
BEGINNING-USER LEVEL MODULE

Objectives

Upon completion of this module, the student should be able to:

- define the terms electronic mail, electronic mailbox, public access network, public message system, and system level prompt.
- demonstrate, to the teacher's satisfaction, the ability to send and receive electronic mail using a real or simulated electronic mail system.

See Telecommunications Resources List for References and Teaching Aids.

Subject	Notes
What is electronic mail?	Define and compare with conventional mail
	Advantages/disadvantages
What can E-mail do?	Almost anything conventional mail can do
How to use E-mail.	Discuss E-mail simulation procedures
	Each student use E-mail system or simulations to send and receive E-mail.
Review E-mail procedures.	

TELECOMMUNICATIONS
COMPETENT-USER LEVEL MODULE

Objectives

Upon completion of this module, the student should be able to:

- define the terms AND/OR search, batch transmission, information utility, manual search, multiple-word search, on-line database, single-word search, and wildcard search.
- demonstrate, to the teacher's satisfaction, the ability to send and receive electronic mail using batch transmission on a real or simulated electronic mail system.
- demonstrate, to the teacher's satisfaction, the ability to search for and retrieve information from a real or simulated information utility.

See Telecommunications Resources List for References and Teaching Aids.

Subject	Notes
How to use batch transmission	Discuss batch mode E-mail.
	Demonstrate batch mode E-mail.
	Each student send and receive E-mail using batch mode with a real or simulated system.
What are information utilities?	Define
What's available?	Discuss: Dow-Jones, News, OAG, Encyclopedia, Etc.
	Show a data base directory.
How to use information utilities.	Introduce information utility simulations.
	Discuss simulation procedures.
	Each student use simulation to search for information retrieve information
	Discuss information utility procedures.
	If available, each student search for and retrieve information from on-line utility.
Review information utilities.	

TELECOMMUNICATIONS TEST INSTRUCTIONS

To the student:

1. Retrieve your Telecommunications Test from your electronic mailbox.
2. Print a copy of the test.
3. Answer the questions.
4. Send the answers to your teacher using electronic mail.

- -

TELECOMMUNICATIONS TEST

Directions: Write the letter of the term in the space next to its definition.

a. sysop
b. modem
c. ASCII
d. BBS
e. upload
f. password
g. facsimile
h. on-line
i. baud
j. download
k. parity
l. E-mail
m. log-on
n. protocol
o. auto-dial

________ 1. Send a file to another computer.

________ 2. Receive a file from another computer.

________ 3. A device that converts to tones that can be sent over telephone lines.

________ 4. A character format used to send and receive information.

________ 5. What you do when you connect to a database.

________ 6. Connected to a database.

________ 7. An abbreviation for system operator.

________ 8. A feature of a modem/software combination that dials telephone numbers for you.

________ 9. A term that describes the rate at which information is transmitted.

________10. Abbreviation for bulletin board system.

________11. A secret code that is used to limit access to database information.

________12. Electronic mail.

________13. A term that describes a way to check data validity.

________14. A telecommunications system that transmits and receives drawings.

________15. A term that describes telecommunications procedures.

SOME TELECOMMUNICATIONS SIMULATION SOFTWARE

WINDOWS TO TELECOMMUNICATION is a combination tutorial and simulation program. It supplies tutorial information on the basics of telecommunication, building vocabulary and concepts. Simulation of simple telecommunications functions allows early hands-on experience for the students. WINDOWS TO TELECOMMUNICATION is available from EXSYM, 7016 Dellwood Road N.E., Albuquerque, NM 87110. Telephone (505) 881-3670. The price is $39.95 in copy protected form and $79.95 in a form that includes permission to make 15 copies. (Apple)

THE ELECTRONIC VILLAGE is a communications primer, a friendly introduction to the world of electronic information available through public message systems. The heart of the program, the Bulletin board Simulator, teaches students (grades 3-12+) how to log-on and operate commands in a message system environment. Students can learn off-line, without the need for multiple modems or phone lines, and then transfer their skills when actually communicating on a live system. This simulator is available from EXSYM, 7016 Dellwood Road N.E., Albuquerque, NM 87110. Telephone (505) 881-3670. The price is $79.95, which includes permission to make 15 copies. (Apple, IBM)

THE ELECTRONIC MAILBAG is an electronic mail simulation program. It teaches students how to use electronic mail in a simulated environment. The program disk is merely loaded into the computer, data disk(s) inserted, and the computer becomes an electronic mail system. THE ELECTRONIC MAILBAG is multi-level, providing Elementary, Middle, and Secondary/Post-Secondary configuration and exercises. Lesson plans, reference guides, and charts are included. This simulator is available from EXSYM, 7016 Dellwood Road N.E., Albuquerque, NM 87110. Telephone (505) 881-3670. The price is $49.95. (Apple, IBM)

THE INFORMATION CONNECTION is a telecommunications simulation program that offers a self-paced tutorial, a guided practice session, and an animated glossary of terms. The primary focus of THE INFORMATION CONNECTION is simulation of on-line data base search using Grolier's electronic Academic American Encyclopedia. THE INFORMATION CONNECTION also includes a full-featured on line terminal program. This simulator is available from Grolier Electronic Publishing, Sherman Turnpike, Danbury, CT 06816. Telephone (800) 858-8858. The price is $74.95, which includes a backup disk and documentation. A labpack containing one set of documentation and 6 disks is $134.95. (Apple, IBM, Commodore 64)

MICRO MESSENGER, an electronic bulletin board and mailbox, gives your students the experience of manipulating electronic mail and a computer network bulletin board--with only one single disk drive computer. Students can "mail" letters to specific users or post messages on a general bulletin board. A separate option allows them to read any messages left for them. This forum for ideas and creativity also promotes communication and writing skills. Up to 100 studentscan participate in the program at the same time. MICRO MESSENGER is available from K-12 MicroMedia, 6 Arrow Road, Ramsey, NJ 07446. Telephone (800) 922-0401. The price is $39.95. (Apple)

KIDMAIL is an electronic mail simulation that is entirely disk-based. It is designed to encourage the development of writing skills, while at the same time fostering a familiarity with the use of electronic mail. KIDMAIL is a public domain program. Last known contact is Wayne Ayers, Culver City Unified School District, Culver City High School, 4401 Elenda Street, Culver City, CA 90230. Telephone (213) 839-4361. In California, most TECCs have a master available for copying. Outside California, try education-oriented bulletin board systems. (Apple)

INFORMATION SYSTEM SIMULATION is a simulated electronic mail system and data base. It is patterned after a bulletin board run by the Houston Museum of Natural Science. Documentation is not available, nor is the source of the simulation known. The last known telephone number of the system is (713) 526-5671. Try calling the system to obtain further information. (Apple)

KNOWLEDGE INDEX DEMONSTRATION DISK--Knowledge Index is an on line databank of over 18 million items specifically addressing the information needs of microcomputer users, doctors, engineers, students, business professionals, and lawyers. The demonstration disk offers a general introduction to Knowledge Index, an interactive instruction area, and a small searchable database. Contact DIALOG Marketing Department at 800-3-DIALOG. Cost is $5, and the disk is available for IBM PC and compatibles.

Many bulletin board system programs will also operate in the "local" mode as simulators. If you are using a bulletin board system at the present time, try it in the "local" mode with the phone line disconnected. You may be pleasantly surprised! Many of the programs will even work without a modem. That is, they can be "fooled" into thinking that a modem is present. Talk to your local "resident wizard" about using the bulletin board program as a simulator.

SOME TELECOMMUNICATIONS RESOURCES

BOOKS

Business Computer Systems: David M. Kroenke; Mitchell Publishing Company, 1984
Dialcom Services User Guide; ITT Dialcom, 1985
DIALOG Guide to Searching; Dialog Information Services, Inc., 1987
Introduction to Computers & Data Processing: Shelly & Cashman; Anaheim Publishing Company, 1980
Microcomputer Data Communications Systems: Derfler; Prentice-Hall, Inc., 1982
OMNI Online Database Directory: Davies & Edelhart; Collier Books, Published yearly
ON LINE: Steve Lambert; Microsoft Press, 1985
The Communications Revolution: Williams; Sage Publications, 1982
The Complete Handbook of Personal Computer Communications: Glossbrenner; St. Martin's Press, 1983
The Electronic Office and You - Word Processing Concepts: Boyce/Popyk; Gregg/McGraw-Hill, 1985
Word/Information Processing: L. Joyce Arnston; Kent Publishing Company, 1983

MAGAZINES AND NEWSLETTERS

BYTE
COMPUTE!
CUE (Computer Using Educators) Newsletter
Electronic Learning
Electronic Education
inCider
LAN: Local Area Network Magazine
MACWORLD
ON-LINE Access Guide
PC Magazine
PC World
Personal Computing
RUN

MISCELLANEOUS

Telecommunications Transparencies, National Instructional Systems, Inc., Huntington Beach, CA

RESEARCH THROUGH TELECOMMUNICATION

CONTRIBUTOR:
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Objectives:

- The student will use a subscription data base to research a problem area, organize data according to directions, and use a word processing system to produce a paper.

Procedures:

- Have students select a topic of interest within subject areas appropriate to your course.

- Select a data base and access it through one of the major telecommunications networks. Enter descriptors via the computer until six to ten articles with pertinent information have been identified. Students then print the author's name, title, source, and abstract of the articles on the screen. After this portion of the data search is finished, students copy the printed information from the buffer of the computer onto a disk. Students later print the information on the disk in hard copy form which serves as the major resource for writing their papers. With this information in hand, the class goes to the school library and additional sources are reviewed as needed.

- Have students outline, using word processing software, how they will write their papers, list their major conclusions, and critique these conclusions. The computer exercise is not for the sole purpose of writing papers but is rather a project in doing research.

Materials needed:

- Student handout: SKELETAL OUTLINE OF A RESEARCH PROJECT
- Modem 300 or 1200 baud (1200 preferred)
- A telecommunications software capable of buffer storage
- Subscription service (e.g., Dow Jones)

SKELETAL OUTLINE OF A RESEARCH PROJECT

In an outline form, but using complete sentences, provide the following information about a study area you are interested in researching. The outline below is a "blueprint" for you to follow to complete your paper.

I. TITLE
(of your research project)
II. Statement or Explanation of Problem
III. Definitions
(terminology not common to everyday usage.)
IV. Limitations of the Research
V. Five Major Prior Research Studies
VI. Design of the Research
(step-by-step procedure of how you conducted your research. This is the most important section. Be explicit and detailed.)

SECTION V procedure:

The selection of the five studies to review is your own, as long as it is from a research paper or periodical.

Include the following information for each study:

A. Title
Researcher (author)
Date of publication
Publisher
B. Statement of the Problem (give the actual statement)
Hypotheses (if given, and if so, list only two or three)
Limitations of the research
C. Major conclusions
(Don't try to list them all. List no more than three or four that seem major to you.
D. Critique for each study (NOTE: this is the second most important part)
1. Give a critical and objective analysis. Avoid personal, subjective reaction, such a "I like," "This was lousy."
2. Indicate why (by specific examples whenever you can) the study was strong or weak.
3. Look equally at strengths and weaknesses.
4. Avoid lengthy critical reactions to minor items; base the critique largely on major design factors--what makes the conclusions believable or unbelievable.

Evaluation: Point value (125) of the design will be dependent upon:

1. Appropriate methods and tools of research
2. Appropriate designs
3. Correct use of English
4. Logic
5. Coherence of the totality

MOCK TELECOMMUNICATIONS CORPORATION

CONTRIBUTOR:
Jane Melroy
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Objectives:

- The student will practice preparing and receiving messages via the computer in a mock telecommunications corporation.

Procedures:

- Mock Telecommunications Corporation Project Overview

  1. The school location is corporate headquarters and the instructor is the chief corporate officer.
  2. Advanced business procedures students are allowed to name the corporation and to design the corporation's logo.
  3. Each student in the advanced class chooses the location for his/her MAIN office (anywhere in the world).
  4. Each student in a lower-level business computer course(s) chooses a location for his/her BRANCH office (anywhere in the world except the locations already chosen by the advanced business students).
  5. The branch offices are divided equally among the main offices.
  6. All students are required to write the Chamber of Commerce in the chosen city explaining the mock corporation and requesting information about the city and the business community. (Information received can be used for a bulletin board.)
  7. A chain of communication is formed to be used with the networked computers. Branch offices must communicate with the designated main office who, in turn, corresponds with headquarters to receive instructions, special assignments, etc.
  8. This project works best if the advanced course is scheduled for class prior to the other courses. Advanced students can review messages sent to them from their branch office(s) from the previous day and return messages to their branch office(s) for the current day.

Comments:

- A highly organized process which allows classes taught at different times to interact through telecommunications. Secondly, students explore corporate business structures and world geography.
- While telecommunications and electronic mail are today's business communication trend, students frequently do not get the exposure to feel confident using these technologies. This activity was developed in an effort to expose students to communicating via the computer and to understanding the process of telecommunications.
- The mock corporation helps students understand the business world communication link and the simulation possibilities for electronic mail are endless--let your imagination go!

ELECTRONIC MAIL EXERCISE

CONTRIBUTOR:
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Bozeman, MT 59715

Objectives:

- The student will compose messages and will send and receive messages through electronic mail.

Procedures:

- Give students the ELECTRONIC MAIL EXERCISES handout and review receiving and sending messages as needed for Exercises 1a and 1b. (Names of the Student Council members can be changed to represent your class.) Complete Exercise 1a and 1b.

- Prepare a short message to place into your electronic mail system prior to the students beginning Exercise 2. In Exercise 2, students receive a message from the Central office. For example:

> We have received complaints lately about the services provided by the DECA store. Several students have reported that the store does not provide many items students wish to have. Please send the Central Office any ideas you have to help solve this problem.

- Complete Exercise 2. Students are to develop a survey form. Developing the form could be a group project. Copies of the completed form could be distributed among the students' friends or another class.

Materials needed:

- Computer with electronic mail capabilities or electronic mail/telecommunication simulation software.

Comments:

- The class could be split into two sections where students send messages to each other as they complete the exercises.

ELECTRONIC MAIL EXERCISES

Exercise 1a:

The student council meeting is next Thursday (you look up the date). We will meet in the library classroom during the second lunch hour. Tell the student council that the purpose of the meeting will be to set up a calendar schedule for the next school year. All student council members must be present. Remind them to turn in their advance make-up slips.

Compose and send this message to the Student Council members listed below:

John Smith
Mary Jones
Sally Adams
Jim Johnson
Joyce Brown
Jane Doe
David Nelson
Jennifer Olson
Sammy Swinn

Exercise 1b:

Compose and send a message to the names listed in Exercise 1a. Due to a scheduling conflict, the date of the meeting needs to be changed to Friday. The library classroom will not be large enough to accommodate us, so we will be using room D-8. We will still use the second lunch hour. Remind them to get the advance make-up slips.

****

ELECTRONIC MAIL

Exercise 2:

We received a message from the Central Office at Willson School stating that the DECA store was not providing the services that the students desired. You will write a message to the Central Office stating that you will conduct a survey of the students in your class to determine what additional services the DECA store could provide. You will send your findings in as soon as you complete the survey.

What you are to do:

1. Read the EM message.
2. Compose the reply.
3. Send the reply.
4. Compile a survey form, survey the class.
5. Compose the second reply.
6. Send the reply.

TELECOMMUNICATIONS CROSSWORD PUZZLE

CONTRIBUTOR:
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Santa Ana, CA 92701

Objectives:

- The student will reinforce his/her telecommunications terminology.

Procedures:

- Distribute handout (TELECOMMUNICATIONS CROSSWORD PUZZLE) and have students complete using the across and down clues.

Materials needed:

- Handout: TELECOMMUNICATIONS CROSSWORD PUZZLE

Comments:

- Could be used for a test, homework, or classroom assignment and discussion.

Answer:

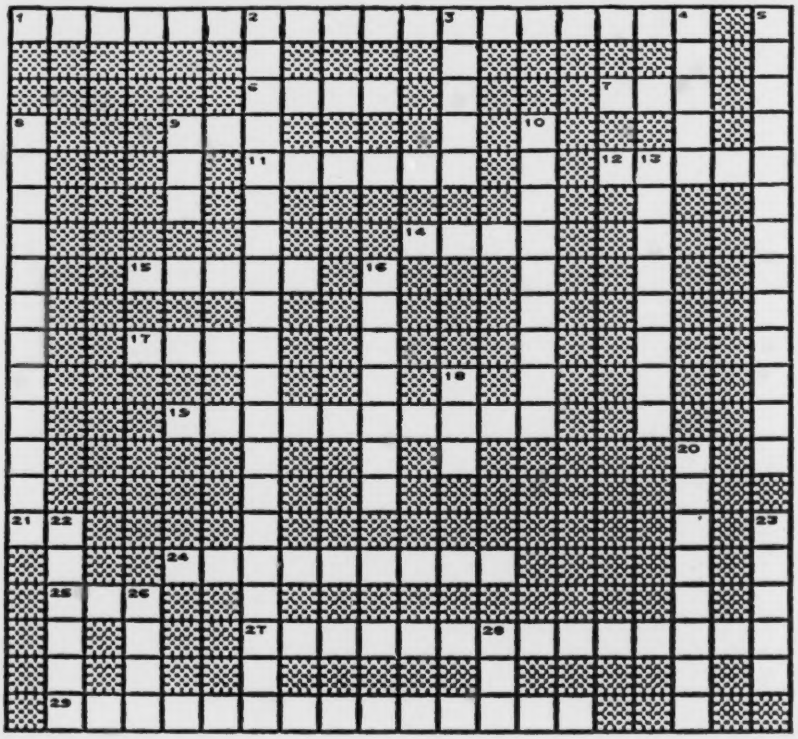
```
TELECOMMUNICATIONS B
      O    A     Y U
      DATA L   BBS L
P   CPU    I F   O L
U   R LOGOFF A APPLE
B   T A      C  A  T
L     T   BITS  S  I
I  LOGON P   I  S  N
C     R  R   M  W  B
D  BAUD  I   I  O  O
O     E  N I L  R  A
M   COMPATIBLE  D  R
A     O  E M     I D
I     D  R       N
NO    U          T M
 N  UPLOADING    E O
 LAB  A          R D
 I Y  TELECONFERENCE
 N T  O     E    A M
 ELECTRONICMAIL  L
```

Word List:

Apple
Baud
BBS
Bits
Bulletin board
Byte
Calif
Compatible
CPU
CRT
Data
Electronic mail
Facsimile
IBM
Internal

Lab
Logoff
Logon
Modem
Modulator demodulator
NEA
No
Online
Password
Printer
Public Domain
SYSOP
Telecommunications
Teleconference
Uploading

TELECOMMUNICATIONS CROSSWORD PUZZLE



ACROSS

1. The exchange of information using modern technology
6. Information that the computer processes
7. Bulletin board system (abbr.)
9. Central processing unit (abbr.)
11. To disconnect from a message system (2 words)
12. Common brand of computer
14. Eight of these make one byte
15. To connect to a message system (2 words)
17. The rate or speed of transmission
19. Describes hardware/software that will work together
21. Negative answer
24. Sending files via a telecom system
25. Short for laboratory
27. A meeting of geographically separate people via telecom
29. Messages that are written, sent, and received electronically (2 words)

DOWN

2. The full name for modem (2 words)
3. California (abbr.)
4. Name given to the systems operator
5. A telecommunications system whereby information is "posted" for shared use (2 words)
8. Describes software that can be copied and distributed legally without permission (2 words)
9. Cathode ray tube (abbr.)
10. A copy of a document sent electronically from one machine to another
13. A secret word shared by user and computer
16. Peripheral used to produce hardcopy
18. A common brand of computer
20. Describes a modem that "lives" inside the computer
22. Describes the status of computer and telecom system being "ready" for transmission
23. Device that links computer and telephone line
26. Equal to one character of memory
28. National Education Association (abbr.)

TELECOMMUNICATIONS/ELECTRONIC MAIL CROSSWORD PUZZLE

CONTRIBUTOR:
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Objectives:

- The student will reinforce his/her telecommunications/electronic mail terminology.

Procedures:

- Distribute handout (TELECOMMUNICATIONS/ELECTRONIC MAIL CROSSWORD PUZZLE) and have students complete using the across and down clues.

Materials needed:

- Handout: TELECOMMUNICATIONS/ELECTRONIC MAIL CROSSWORD PUZZLE

Comments:

- Can be used after a classroom review of telecommunications/electronic mail.
- Tell students that the crossword puzzle has six hyphenated words and that the hyphen should take one space on the puzzle board.

Answer:

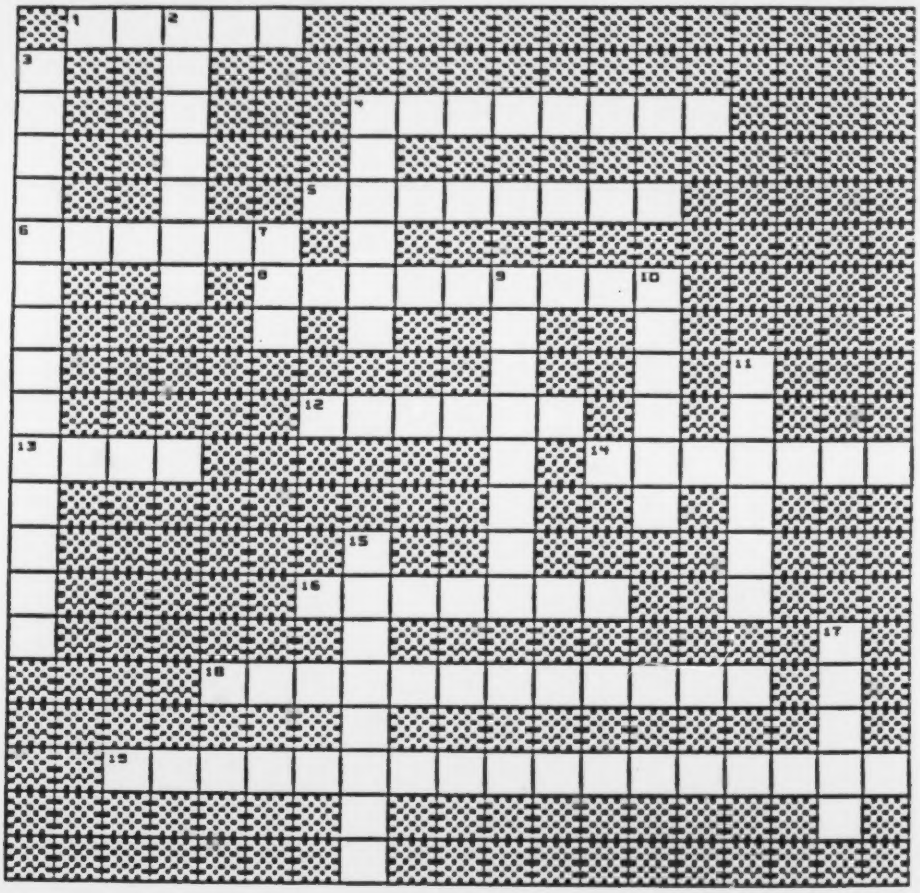
```
 MODEM
B  I
U  G   PASSWORD
L  I   A
L  T  PROTOCOL
E-MAIL I
T  L AUTO-DIAL
I    N Y  A  O
N         T  G R
-     UPLOAD - S
BAUD      B LOG-OFF
O         A  N 2
A      D  S    3
R     CONNECT  2
D      W         S
    ASYNCHRONOUS Y
       L         S
  TELECOMMUNICATION
       A         P
       D
```

Word list:

Asynchronous
Auto-dial
Baud
Bulletin-board
Connect
Database
Digital
Download
E-mail
Lan

Log-off
Log-on
Modem
Password
Parity
Protocol
RS-232
SYSOP
Telecommunication
Upload

TELECOMMUNICATIONS/ELECTRONIC MAIL CROSSWORD PUZZLE



ACROSS

1. A device that converts computer signals for communication
4. A secret code
5. Send and receive file specification
6. Send private message to another individual
8. Dials for you
12. Send a file
13. Rate at which data is sent
14. Signing off bulletin board
16. On-line to telecommunication system
18. Electronic signal across telephone lines
19. Transmitting data using public telephone systems

DOWN

2. Electronic signal produced by the computer
3. Telecommunication feature that allows posting of public messages
4. Term that describes a way to check data validity
7. Locate area network
9. On-line feature that stores and retrieves large amounts of data
10. Signing on to a telecommunication system
11. Modem serial standard
15. Receive a file
17. An abbreviation for system operator

Computer Languages

Category 15

INTRODUCTORY PROGRAMS FOR THE COMMODORE 64

CONTRIBUTOR:
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Objectives:

- The student will demonstrate competency in using the PRINT and END, IF...THEN, FOR...NEXT statements, and the GOTO function.
- The student will be introduced to payroll recordkeeping using the computer.

Procedures:

- Duplicate handouts for each command.
- Explain a command and demonstrate an application.
- Instruct the students to RUN the given program.
- Instruct the students to alter or adapt the given program and RUN another version.

Materials needed:

- BASIC for the COMMODORE 64.
- Handouts: INTRODUCTION TO BASIC and NOW IT'S YOUR TURN

Comments:

- The teacher could assign different employee title with varing wage rates and hours in the PAYROLL RECORDKEEPING ACTIVITY to show students the power of a computer program.
- This activity could be adapted easily to other computers.

INTRODUCTION TO BASIC
Commodore 64

There are many computer languages. One language that many computers understand is BASIC. BASIC has a structure (syntax) and a vocabulary. Because this language uses English words, you can learn it quickly.

Commands and Program Statements

The NEW Command and the PRINT and END Statements. The computer can be told what to do by typing in certain BASIC words known as **commands**. The command NEW, for example, clears the computer's memory of any program that was there so that it is ready for a new program to be entered. The word READY will appear on the screen.

As you type the word NEW, it will be displayed on the computer screen. Pressing the key marked RETURN tells the computer that you have finished typing the command and that it should be carried out.

If the computer understands the command, it will be executed. If not, an error message will be printed.

For example, if you typed the word MEW instead of NEW and then pressed the RETURN key, the computer would not know what you meant. It would print an error message and then wait for you to give it another command. You could then repeat the command correctly, and it would be carried out as if you had not made the error.

In order for the computer to do something useful, it must be given a series of instructions which it remembers and then carries out when told to do so. This list of instructions is called a **program.**

In BASIC, each instruction is made up of a line number and a statement.

SAMPLE PROGRAM

To enter the following program into the computer's memory, you would first type the number 10, then the word PRINT, then the word HELLO in quotation marks. When you press the RETURN key, the computer reads the line and includes it as part of the program being stored in memory.

The following BASIC program consists of two instructions. The first tells the computer to print whatever is between the quotation marks. The second instruction indicates that the program is over and the computer should stop processing it.

```
10 PRINT "HELLO"

20 END
```

NOTE: The line numbers do not have to be consecutive. Programmers usually number by tens to make the program easy to read and to allow new lines to be added later on.

When the RUN command is given, the instructions will be carried out in order of their line numbers, from lowest to highest.

NOW IT'S YOUR TURN

Directions: You will now have the opportunity to practice basic statements and functions. Proceed through each activity as your teacher directs.

SKILL: IF...THEN

ACTIVITIES:

1. Enter and run this program:

```
10 A=0
20 IF A=0  THEN 60
30 A=A+1
40 PRINT A
50 GOTO 20
60 END
```

This is an example of using IF...THEN to count.

2. Enter and run this program:

```
10 PRINT "HOW OLD ARE YOU";
20 INPUT A
30 ?:?
40 IF A = 18 THEN 70
50 PRINT "YOU ARE NOT ELIGIBLE TO VOTE."
60 END
70 PRINT "YOU ARE ELIGIBLE TO VOTE."
80 END
```

This is an example of using IF...THEN to make decisions.

GOTO FUNCTION

ACTIVITIES:

1. Enter and run this program:

```
10 Print "WELCOME TO OUR"
20 GOTO 80
30 Print "ENJOY YOURSELF"
40 GOTO 70
50 Print "I HOPE THAT YOU"
60 GOTO 30
70 END
80 Print "COMPUTER SEMINAR"
90 GOTO 50
```

   Your program should look like this:

```
WELCOME TO OUR
COMPUTER SEMINAR
I HOPE THAT YOU
ENJOY YOURSELF
```

2. Without erasing your program, try to add lines to make it look like this:

```
WELCOME TO OUR

COMPUTER SEMINAR

I HOPE THAT YOU

ENJOY YOURSELF
```

   HINT: Leave a blank line at 15, 25, etc.

SKILL: FOR...NEXT

ACTIVITIES:

1. Enter and run this program:

```
10 FOR T=1 TO 10
20 PRINT T
30 NEXT T
```

Change the program to print 1 to 40 in two columns.
Change the program to print 1 to 100 in rows across the screen.

2. Enter and run this program:

```
10 FOR B=1 TO 10
20 ? "YOUR NAME"
30 NEXT B
```

Add the following lines:

```
25 FOR Y=1 TO 300
27 NEXT Y
```

NOTE: FOR...NEXT used in this way produces a delay.

3. Write a program to print the 9's multiplication table.

4. Count with FOR...NEXT
Enter and run this program:

```
10 FOR R=1 TO 10
20 Print R
30 NEXT R
```

5. Enter and run this program:

```
10 FOR B=1 to 100 STEP 10
20 PRINT B
30 NEXT B
```

6. Write a program to count from 100 to 0 in steps of 2.

7. Write a program to produce the following output:

```
10
 9
 8
 7
 6
 5  WE'RE HALF WAY THERE
 4
 3
 2
 1
```

PAYROLL RECORDKEEPING ACTIVITY

Enter and run this program. Follow your teacher's instructions for the input statements.

```
NEW

 10 PRINT "SHIFT/CLR HOME"
 20 PRINT "WHAT IS EMPLOYEE'S NAME"
 30 INPUT E$
 40 PRINT "WHAT IS THE HOURLY RATE OF PAY?"
 50 INPUT R
 60 PRINT "NUMBER OF HOURS WORKED?"
 70 INPUT N
 80 PRINT "GROSS PAY" R*N
 90 PRINT "FICA TAX"
100 PRINT F=(R*N)*.067
110 PRINT "ITW"
120 INPUT I
130 PRINT "OTHER DEDUCTIONS"
140 INPUT D
150 PRINT "SHIRT/CLR HOME"
160 PRINT E$
170 PRINT "$"F "FICA TAX"
180 PRINT N "HOURS"
190 PRINT "GROSS PAY $" R*N
200 PRINT "$"F "FICA TAX"
210 PRINT "$"I "ITW"
220 PRINT "$"D "OTHER DEDUCTIONS"
230 PRINT "REGULAR GROSS PAY IS $" R*N
240 PRINT "TOTAL DEDUCTIONS ARE $" F+I+D
250 PRINT "NET PAY IS $" (R*N)-F-I-D

RUN
```

BASIC PROGRAMMING PROBLEM
FLOWCHART AND PROGRAM PROBLEM TO CALCULATE TAX AND TOTAL PRICE

CONTRIBUTOR:
John Majernik
Belvidere High School
Belvidere, IL 61008

Objectives:

- The student will write a simple BASIC program to calculate gross pay using a flowchart as a guide.
- The student will flowchart and code a program to calculate tax and total price.

Procedures:

- Prepare handouts.
- Discuss procedures for one problem at a time.
- Answer any questions that occur during the discussion.
- Instruct students to follow directions and complete the assignment.
- If computers are available, instruct the students to enter the programs and EXECUTE their suggested solutions.
- Verify the results.

Materials needed:

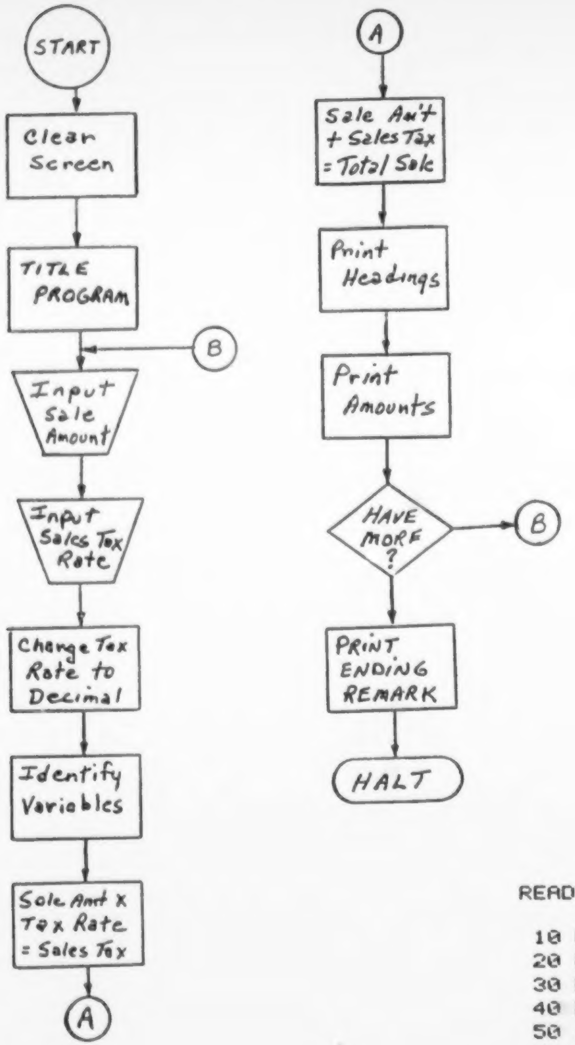
- BASIC capabilities on a computer
- Handouts: BASIC PROGRAM ASSIGNMENT I and BASIC PROGRAM ASSIGNMENT II

Key:

- Key to BASIC PROGRAMMING ASSIGNMENT I

```
10  LET H = 40.0
20  LET R = 3.75
30  LET G = H * R
40  PRINT H,R,G
50  END
```

■ Key to BASIC PROGRAMMING ASSIGNMENT II


START
Clear Screen
TITLE PROGRAM
B
Input Sale Amount
Input Sales Tax Rate
Change Tax Rate to Decimal
Identify Variables
Sale Amt x Tax Rate = Sales Tax
A
A
Sale Am't + Sales Tax = Total Sale
Print Headings
Print Amounts
HAVE MORE ?
B
PRINT ENDING REMARK
HALT

```
READY.

 10 PRINT"♥"
 20 PRINT TAB(10);"SALES TAX CALCULATION"
 30 PRINT
 40 PRINT"WHAT IS THE PRICE OF THE ITEM?"
 50 INPUT P
 60 PRINT
 70 PRINT"WHAT IS THE SALES TAX PERCENT?"
 80 INPUT TP
 90 REM**P=PRICE OF ITEM
 92 REM**TP=SALES TAX PERCENT
 94 REM**T=SALES TAX
 96 REM**TD=TAX AS DECIMAL
 98 REM**TS=TOTAL SALE
 100 LET TD=TP/100
 110 LET T=P*TD
 120 LET T=INT(100*T+.5)/100
 130 LET TS=P+T
 140 PRINT"PRICE","TAX","TOTAL SALE"
 150 PRINT
 160 PRINT P,T,TS
 170 PRINT
 180 PRINT"DO YOU HAVE MORE?"
 190 INPUT Y$
 200 IF Y$="YES" GOTO 30
 210 PRINT"HAVE A NICE DAY--GOODBYE!"
 220 END
```

NAME ______________________

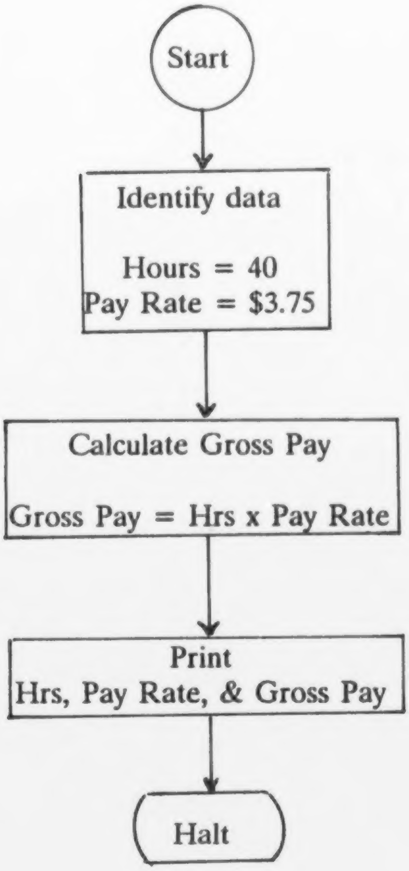
BASIC PROGRAMMING ASSIGNMENT I

INSTRUCTIONS: Write a simple BASIC program to calculate the gross pay of Mike Worker using the flow chart shown below as your guide. Write the necessary BASIC instructions on the lines to the right of the flow chart.

Here are a few programming hints to help you:

1. You are free to choose your own variable names.
2. This simple program is only capable of calculating Mike Worker's gross pay; it will not work for anyone else.

FLOWCHART


Start
Identify data
Hours = 40
Pay Rate = $3.75
Calculate Gross Pay
Gross Pay = Hrs x Pay Rate
Print
Hrs, Pay Rate, & Gross Pay
Halt

BASIC PROGRAM

____

____

____

____

____

____

____

____

BASIC PROGRAMMING ASSIGNMENT 2

For this assignment you are to prepare a FLOWCHART and then WRITE A PROGRAM in the BASIC language that will compute the amount of the tax on a sale and add that tax to the price of the item to find the total the customer owes.

Follow these programming aids when preparing your FLOWCHART and WRITING YOUR PROGRAM:

1. The program should be written so that the screen is cleared before the program begins being printed on the screen.
2. Title the program SALES TAX CALCULATION and have it printed in the approximate center of the screen.
3. The program should allow for both the amount of the sale and the sales tax percent to be input by the user so the computer must be programmed to ask for these amounts.
4. Use the remark statement to identify all the variable names you use in the program.
5. The amount of the sales tax can be found by multiplying the sale amount by the sales tax rate.
6. Remember, if your program asks for a sales tax percent, it must be converted to a decimal before making the calculation.
7. Remember that the sales tax must be added to the price to find the total sale amount.
8. Write the program so the computer will print the headings PRICE, TAX, and TOTAL SALE all on one line with the proper amounts printed one blank line below them.
9. Write the program so that the sales tax will be rounded to two decimal places.
10. Write the program so the computer will ask the user if he/she would like to do another sales tax calculation.
11. If the user does not want to run the program again, have the computer print, HAVE A NICE DAY--GOODBYE.

To check your program, give it this problem: Sale amount $80.00, sales tax rate 5%. The computer output should be: PRICE = $80.00, TAX = $4.00, TOTAL SALE = $84.00.

THIS ASSIGNMENT IS DUE:______________________________

PROGRAMMING COMPUTER GRAPHICS AND MUSIC

CONTRIBUTOR:
Irma Nielsen
Kinder High School
Kinder, LA 70648

Objectives:

- The student will understand how computer graphics and computer music are combined to create a musical program.

Procedures:

- Have each student create a Christmas or winter scene by writing a graphics program.
- Write a program that plays holiday music or carols.

Materials needed:

- Our handy resource was the textbook, Introduction to Computers Using the Apple II, by Steven L. Mandell, published by West Publishing Company, Chapter 17, "Graphics, Special Effects, and Sound."
- Microcomputers with graphics capabilities and with sound capabilities

Comments:

- This lesson is taught to seniors who have already completed a half-year of Computer Literacy and have also completed about twelve weeks of Computer Science and Data Processing.
- Teaching color graphics in December can be fun and motivating for students. On the day before the Christmas holidays, we invited several classes to view our musical Christmas programs on the computers. The pictures were beautiful, and the songs were festive.
- Variations: (NOTE: Students must plan each drawing on graphic paper, write and input the programs, and debug each program.)
    - -- Students draw their first initial, then their second and last name initials. Finally, they draw their whole name, write the program, and add fancy pictures with their names. (NOTE: These are first assignments.)
    - -- Students draw any picture. Can use holiday themes. Needle-work patterns provide excellent designs. (NOTE: More advanced assignments.)

General Computer Usage

Category 16

PROTECTING YOUR DISKETTES

CONTRIBUTOR:
William Kaeding
Benton Harbor High School
Benton Harbor, MI 49022

DO . . .

Use only a felt-tipped pen to write on diskette labels.

Keep diskettes dry and away from heat.

Store diskettes properly.

Obtain a backup.

Clean the read/write heads as specified in the owner's manual.

Follow start-up procedures listed in the disk operation manual.

Handle diskettes with care.

DON'T . . .

Touch the mylar portion of the diskette, visible through the read/write window.

Take the diskette out of the disk drive when the light is on.

Place the diskette near anything magnetic or electrical.

Use ball-point pen or pencils to write on the diskette label.

Place a diskette in sunlight or near heat.

Bend a diskette.

Allow exposure to dust.

Place two diskettes next to each other without their folders in place.

Use paper clips or rubber bands on diskettes.

Put a diskette containing valuable data in a system you suspect is malfunctioning.

Remove or open the protective mylar covering.

Eat, drink, or smoke in the computer room or disk storage area.

COMMODORE 64 KEYBOARD TOUR

CONTRIBUTOR:
Lynette Ledbetter
Lorain City Schools
Lorain, OH 44052

Objectives:

- The student will become familiar with the Commodore 64 keyboard.

- The student will demonstrate functions of the Commodore 64 keys.

Procedures:

- Photocopy handout that illustrates the functions of the Commodore 64 keys.

- Observe students as they follow the handout and as they demonstrate the functions of the Commodore 64 keys.

Materials needed:

- Handout: COMMODORE 64 KEYBOARD TOUR

- Access to a Commodore 64

Comments:

- A similar handout could be prepared for whatever brand of computer is available in a class setting.

- Recommend using this exercise with some simple straight copy so that students will have sample copy where necessary to input and to manipulate the keys.

COMMODORE 64 KEYBOARD TOUR

Directions: Practice each key(s) as you work your way through the handout.

CLR HOME		Cursor moves to "home"
SHIFT	CLR HOME	Clears screen; cursor moves "home"
INST DEL		INSERT/DELETE: erases characters by cursor moving backwards; important editing key
CTRL		CONTROL: controls a program by slowing it down
CTRL	' 7 BLU	Gets the color blue; also used for any color you want by choosing the appropriate number
CTRL	, 9 RVS ON	Reverses colors of your letters and background, i.e., white print on black screen
CTRL	0 RVS OFF	Turns off reversed color
RUN STOP		Stops running a program and give the user control; on some minicomputers this function is achieved with a BREAK key
RUN STOP	RESTORE	Resets the computer from the beginning without losing the memory; ON/OFF resets but also loses the RAM

RETURN		Returns each line of instruction into the computer's memory; on some computers, this key is equal to the ENTER key whose function is to "ENTER" the data you typed
	SHIFT	Gets you from UPPER CASE to lower case or into a "text" mode like a typewriter
SHIFT	M	Gets the graphics on the right side of the M key
CTRL	M	Gets the graphics on the left side of the M key (M key is only one example; the process works for all keys with graphic capabilities)
CRSR		Moves cursor down one line; edit key
SHIFT	CRSR	Moves cursor up one line; edit key
CRSR		Moves cursor to the right one space; edit key
SHIFT	CRSR	Moves cursor to the left one space; edit key
F 1 F 2		Ten Function keys on the right of the keyboard are mainly used with games and cartridges

A DICTIONARY OF COMPUTER APPLICATION PROCEDURES

CONTRIBUTOR:
Helen Scheufler
Sandusky City Schools
Sandusky Adult Education
Sandusky, OH 44870

Objectives:

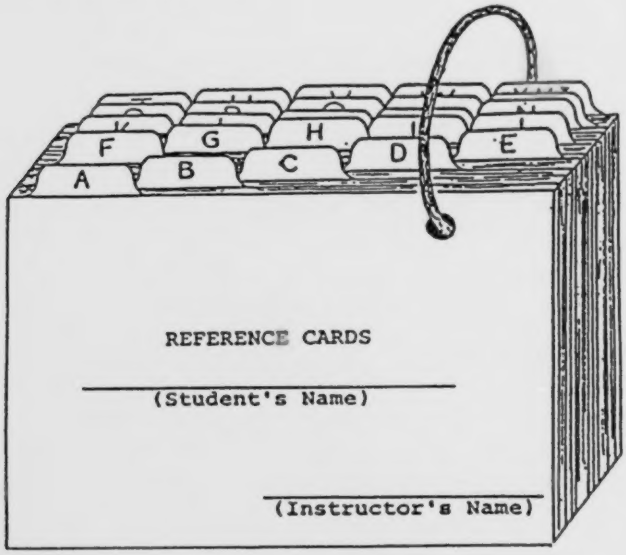
- The student will produce a procedures dictionary by preparing reference cards for the operational commands of a computer application software package.
- The student will acquire the skill to independently produce a similar dictionary for other software packages they encounter in their employment.

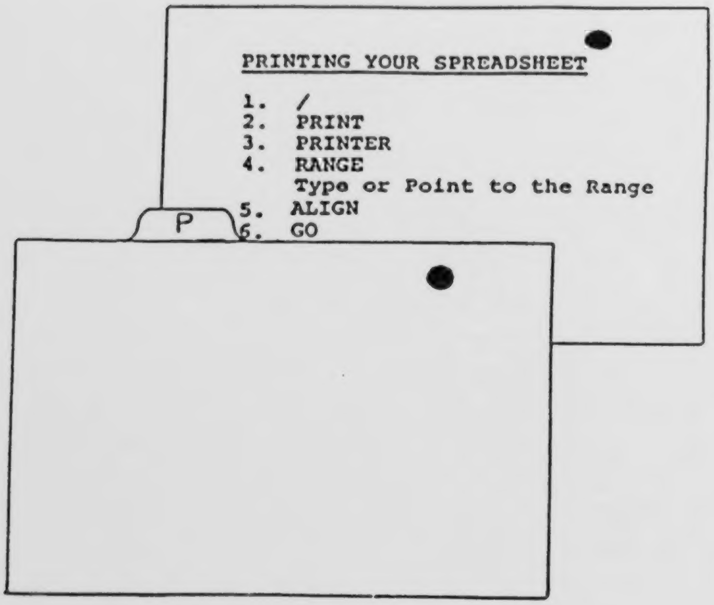
Procedures:

- During an allotted time at the end of the class period, students will prepare the dictionary entries for the operational commands presented and practiced that day. These entries become an expanding reference source to which the students refer should they become confused about a procedure.
- During the first class meeting, the teacher will explain the procedures dictionary. The student will be required to have 100 hole-punched 4" x 6" file cards on which the commands will be listed, one 4" x 6" alphabetical index guide, and one 2" ring or a 4" x 6" file box to hold the cards. The ring is preferable because a card is not easily removed from the ring or misfiled during use.
- For each lesson which introduces a new command(s), the teacher will give each student a handout containing the information needed to complete a procedures card.
- Time is allotted for the student to copy the information from the handout to a reference card(s). Cards may be typed or hand written. The completed reference card(s) is placed in proper order in the student's Dictionary of Computer Application Procedures. Students in adult education or in college-level courses should complete the cards as homework.
- The completed dictionary should be graded at the end of the course and should be a percentage of the total grade. One method of grading is to count the number of commands that are entered and assign a grade for the number completed from a pre-determined scale.

Materials Needed:

- 100 hole-punched 4" x 6" cards and one 4" x 6" alphabetical guide
- one 2" ring or one 4" x 6" file box


A
B
C
D
E
F
G
H
REFERENCE CARDS
(Student's Name)
(Instructor's Name)



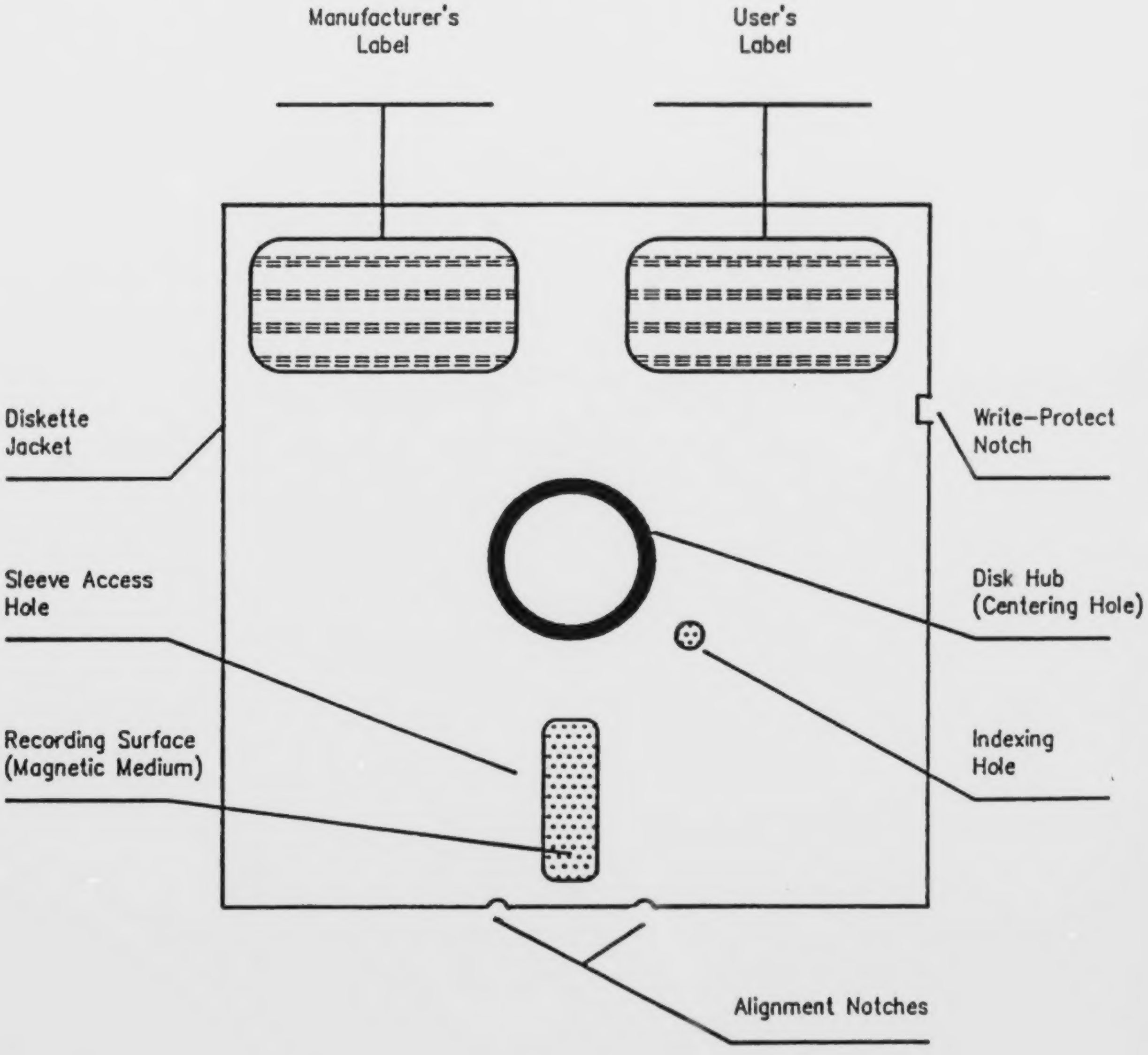
PRINTING YOUR SPREADSHEET

1. /
2. PRINT
3. PRINTER
4. RANGE
Type or Point to the Range
5. ALIGN
6. GO

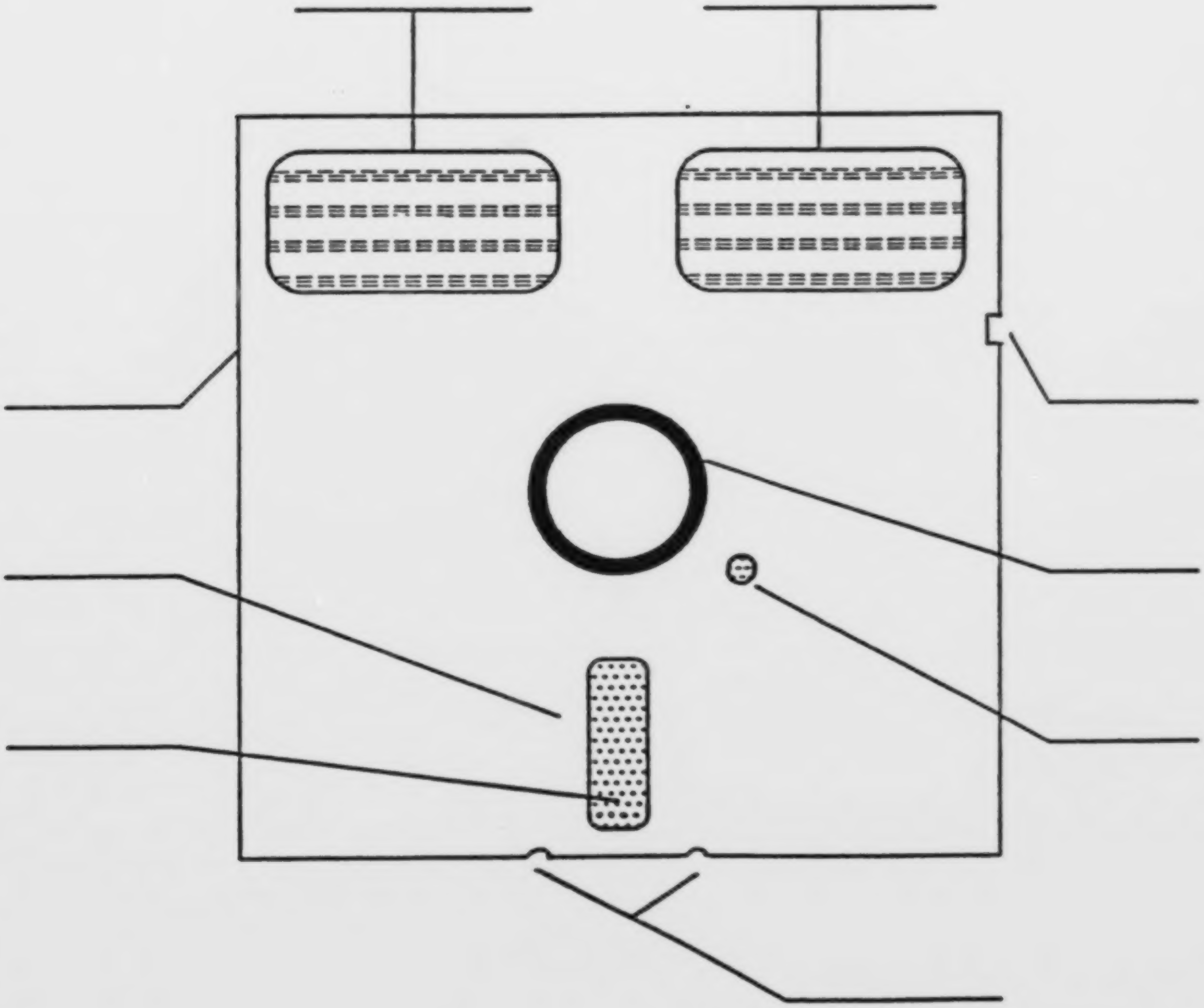
5 1/4-INCH FLOPPY DISKETTE

CONTRIBUTOR:
Bonnie J. White
Center for Vocational and Adult Education
Auburn University, AL 36849-5526

5 1/4-INCH FLOPPY DISKETTE


Manufacturer's Label
User's Label
Diskette Jacket
Write-Protect Notch
Sleeve Access Hole
Disk Hub (Centering Hole)
Recording Surface (Magnetic Medium)
Indexing Hole
Alignment Notches

5 1/4-INCH FLOPPY DISKETTE



Teaching Techniques/ Classroom Management

Category 17

DISK FILING-RETRIEVING SYSTEM

CONTRIBUTOR:
Melissa Andrews
Jane Snapp
Daniel Morgan Vocational Center
Spartanburg, SC 29302

Objectives:

- The student will prepare a disk holder and "out" guide to help maintain a filing-retrieving system for both data and program disks.
- The student will use colored "out" guides to file program disks in correct order.

Procedures:

- Explain the color scheme and the purpose of "out" guides to students.
- Supervise the students as they prepare the "out" guides and log sheets.
- Practice using the system with students.
- Implement the system for daily class use.

Materials needed:

- Card stock to make "out" guides
- Colored tabs
- Paper to duplicate/reduce logs to size of disk jackets

Comments:

- After the students become familiar with the system, the "out" guide and log sheets will assist with daily filing-retrieving of disks.

Terminology:

- "Out" Guide--paper that designates what is out and who has the object (disk).

A DISK FILING SYSTEM

The following procedure is used to maintain a magnetic media filing system in a classroom where students must share PROGRAM disks and must file their DATA disks in a disk file box.

At first, in our classroom, PROGRAM disks were filed using a numerical system. DATA disks were filed alphabetically by student name. Within a week, disks were being misplaced and misfiled to the point that students could not find what they needed quickly at the beginning of each class.

Now, however, by using the mini file folder, the students have a "holder" in which each DATA disk is filed and the holder is never removed from the filing system. This method solved the problem of individual DATA disks being filed improperly each day. This system works effectively with larger-sized disks as well. (The size of the supplies simply has to be adapted to fit the disk size. See sample illustrations.)

The PROGRAM disk file, however, still became mixed up with students being in a hurry to put things away at the end of the period. Students would place the PROGRAM disks in the wrong folder because they forgot which programs they were using. A system of using "out" guides was adopted whereby all students were provided with a colored "out" card on which they wrote their names. Since a computer can only run one PROGRAM disk at any given time, each student needs only one "out" guide. This "out" guide is placed in the folder from which the student retrieved a PROGRAM disk.

At the end of the period, each student replaces the PROGRAM disk in the folder holding the "out" guide. All PROGRAM disks should be filed properly at the end of the class if all students have the "out" guide with their names on them.

(Optional) a sample illustration is given below of the log sheet used to record the names of documents filed on each DATA disk. The log sheet can be reduced using a photocopier until it fits into the disk jacket with the student's DATA disk.

This system has helped our class run more smoothly and be in order for the next class.

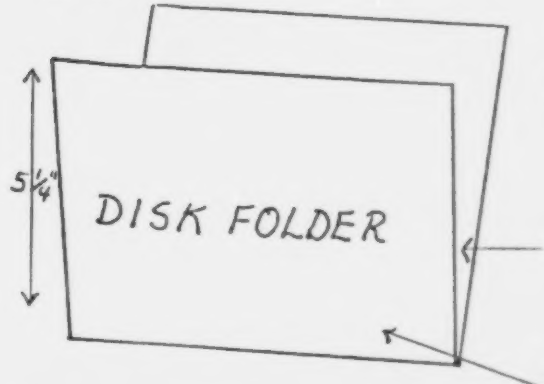
DOCUMENT LOG SHEET

Disk Name Student Name

DATE	DOCUMENT NAME	DOCUMENT DISCRIPTION

5 3/4" Back Panel
5 1/4" (minus) Front Panel
1/2" Tab

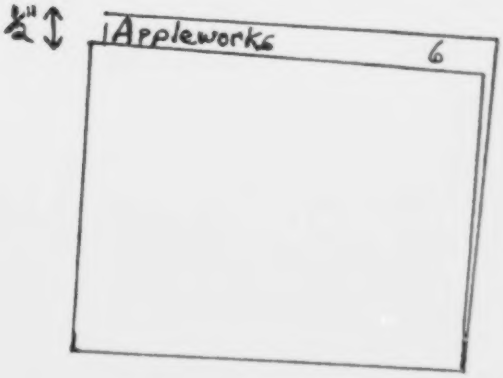
11" Card Stock Length
5 1/4" (minus) Front Panel
5 3/4" Back Panel



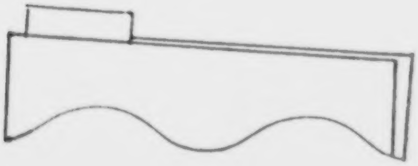
11" Long; Folded up from bottom leaving a tab area (see third illustration)

Disk fits here

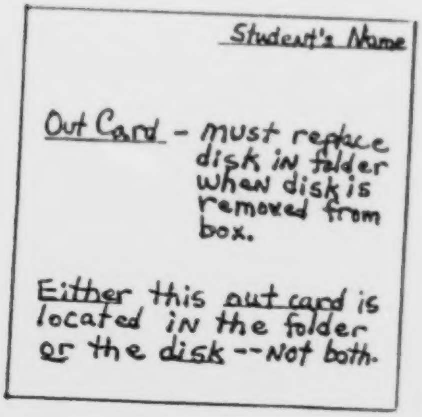
Front is high enough to completely cover disk



When closed, bottom section is shorter than back to allow for a tab.



Tab may also be trimmed to allow for tabs at different positions.



Out Card - must replace disk in folder when disk is removed from box.

Either this out card is located in the folder or the disk--not both.

These folders are then placed in file boxes and "out" cards used when disks are removed. Students never remove folders from files--only disks and "out" cards.

PREPARING A SPREADSHEET TEMPLATE FOR GRADES

CONTRIBUTORS:
Carol Drake
Carolyn Price
Jordan High School
Long Beach, CA 90805

Purpose: To prepare a spreadsheet grading template using Appleworks.

Procedures:

- Steps to prepare the grade template:

1. Insert AppleWorks diskette.
2. Main menu
    A. Add files to Desktop, RETURN
        1. Select spreadsheet, RETURN
        2. Select from scratch, RETURN
        3. Type a name for this new file, RETURN
3. Increasing and decreasing column width as necessary
   Some of the columns will need to be increased by 3 spaces (from 9 to 12); and some of the columns will need to be decreased by 2 spaces (from 9 to 7).
   You are now in Cell A1. To expand this column, type the following:

    1) @ L - Layout (Options: Entry, Rows, Columns, Block)
    2) Select COLUMNS (by moving the cursor with arrows or typing the first letter of the word), RETURN TWICE
    3) Select COLUMN WIDTH option (bottom of screen)
    4) Expand column A by 3 spaces (from 9 to 12) by pressing @ right arrow key 3 times. RETURN
       Using the right arrow key, move to Cell J1
       Repeat steps 1-4 above to expand Column J

   Move to Column B; to decrease this column (and columns C to I) type the following:
    1) @ L - Layout (Options: Entry, Rows, Columns, Block)
    2) Select COLUMNS (by moving the cursor or typing the first letter of the word),
    3) With right arrow highlight to Cell I, RETURN
    4) Select COLUMN WIDTH option,
    5) Decrease width by two spaces (from 9 to 7) by pressing @ left arrow key 2 times, RETURN

   Move to Column K and decrease K through R by repeating steps 1 to 4 above.
4. In Cell A1, type teacher's name. RETURN
   In Cell A2, type course title. RETURN
5. In Cell A3 to S3 and A6 to S6, type and copy double dash line.

TYPING AND COPYING DASHED LINE

1) In Cell A3 type 12 equals (=), begin typing with a quotation mark (") to identify a label. RETURN
2) @ C - Copy Command
3) Select WITHIN THE WORKSHEET. RETURN
4) Leave cursor on the area to be copied (A3). RETURN
5) More cursor to first cell for "copy to" (B3).
6) Type a period (.).
7) Highlight cells to destination (B3 to S3). RETURN

Type and copy a dashed line in Cells A6 to S6 repeating instructions 1 to 7 above. (Be sure to highlight B6 through S6 in step 7 above.)

6. In Cell A4, type Quarter 1 for columnar heading. RETURN
In Cell J4, type Quarter 2 for columnar heading. RETURN
In Cell S4, type Semester for columnar heading. RETURN

7. In Cells A5 to S5, type the following columnar headings:

In Column A Type Student
In Column B Type Prod 1
In Column C Type Prod 2
In Column D Type Final
In Column E Type Total
In Column F Type Avg
In Column G Type Warmup
In Column H Type Timing
In Column I Type Grade
In Column J Type Student
In Column K Type Prod 1
In Column L Type Prod 2
In Column M Type Final
In Column N Type Total
In Column O Type Avg
In Column P Type Warmup
In Column Q Type Timing
In Column R Type Grade
In Column S Type Grade

8. TYPING FORMULAS

FORMAT FOR FIXED DECIMALS

1) Place cursor at top of column to be formatted, B7.
2) @ L - Layout (Options: Entry, Rows, Columns, Block)
3) Select BLOCK (bottom of screen)
4) Move cursor to highlight area - B7 to I7 and move cursor with down arrow as many rows as you have students. RETURN
5) Select VALUE format. RETURN
6) Select FIXED. RETURN.
7) Indicate # of decimals (2). RETURN
8) Place cursor at top of column to be formatted, Cells K7 to S7, and repeat instructions 2 to 7.
9) Type the formulas below:

NOTE: In typing formulas type only one period, computer inserts the other two.)

Cell E7 type equation @SUM(B7.D7). RETURN
Cell F7 type equation @AVG(B7.D7). RETURN *

Cell I7 type equation +(F7*2+G7+H7)/4. RETURN *
Cell N7 type equation @SUM(K7.M7). RETURN
Cell O7 type equation @AVG(K7.M7). RETURN *
Cell R7 type equation +(O7*2+P7+Q7)/4. RETURN *
Cell S7 type equation +(I7+R7)/2. RETURN *

* YOU WILL GET AN ERROR MESSAGE IN THE COLUMN UNTIL YOU ENTER FIGURES.

Copy the formulas in each column down the rows for the number of students in class using the copying procedures:

1) Place your cursor on the first formula to be copied, Cell E7.
2) @ C - Begin copy command (Select Within).
3) Move your cursor to include last formula to be copied, Cell S7. RETURN
4) Move your cursor to first cell "copy to" E8.
5) Type a period(.)
6) Move your cursor down to last cell in Column E. RETURN
7) Formula is highlighted at bottom of screen--respond to each part of the formula as to whether it should be copied RELATIVE to the new location, or NO CHANGE (type R or N to indicate your choice). ALL OF THE RESPONSES WILL BE RELATIVE.

9. Format Cells B5 to I5 and K5 to S5 to right justify the information using the steps below:
   1) Place cursor on B5.
   2) @ L - Layout (Options: Entry, Rows, Columns, Block)
   3) Select BLOCK option (bottom of screen).
   4) Move cursor to highlight Cell B through I. RETURN
   5) Select LABEL FORMAT option. RETURN
   6) Select RIGHT JUSTIFY option. RETURN
   7) All headings are right justified.

   Cell J is for student name and need not be justified. Format Cells K5 through S5 to right justify using steps 1-6 above. (Remember in step 4 to highlight K5 through S5.)
10. AT THIS POINT, SAVE THIS TEMPLATE FOR FUTURE USE--DO NOT PUT GRADES ON THIS SPREADSHEET!

- Steps to input grades on the spreadsheet:

1. Get blank grade template from your data disk. Input the data on the next page to your blank template.
2. Correcting errors:
   If you make an error entering data, type @ U. This brings formula to the bottom of the screen for correction. Using the right arrow key, move the cursor to the error and type the correction. RETURN
   DO NOT USE THE DELETE FUNCTION IN CORRECTING ERRORS AS THIS WILL REMOVE ALL FORMATTING!
3. To speed up the process of numerical entry, turn the recalculator to manual by typing:
   1) @ V
   2) Type R

3) Type F
4) Type M

Be sure to return to automatic calculation when you finish entering data by typing:

1) @ V
2) Type R
3) Type F
4) Type A

4. When you complete entering data, be sure to save <u>UNDER A DIFFERENT NAME</u> so that you can use the template again and again.

- Sample of printouts

```
File:  INPUT PRAC

PRICE & DRAKE
TYPING 1-2

=============================================================================
QUARTER 1
STUDENT         PROD1   PROD2   FINAL   TOTAL   AVG.   WARMUP   TIMING   GRADE
=============================================================================
CAPIC            2.00    2.00    2.00    6.00   2.00     2.00     2.00    2.00
DEL MONTE        1.50    2.40    1.80    5.70   1.90     3.00     2.00    2.20
DRAKE            4.00    4.00    3.70   11.70   3.90     4.00     4.00    3.95
EDEN             1.00    1.00    2.00    4.00   1.33     1.00     1.00    1.17
LUCAS            0.00    2.20    3.00    5.20   1.73     1.00     2.00    1.62
MITCHELL         1.60    0.00    2.00    3.60   1.20     1.40     2.00    1.45
MURTY            2.00    3.00    2.20    7.20   2.40     3.00     3.00    2.70
PRICE            4.00    4.00    4.00   12.00   4.00     4.00     4.00    4.00


================================================================================
QUARTER 2
STUDENT     PROD1  PROD2  FINAL  TOTAL   AVG.  WARMUP  TIMING  GRADE   S.GRADE
================================================================================
CAPIC        2.00   2.00          4.00   2.00    2.00    2.00    2.00     2.00
DEL MONTE    1.00   0.00   2.20   3.20   1.07    3.00    2.00    1.78     1.99
DRAKE        4.00   4.00   4.00  12.00   4.00    4.00    4.00    4.00     3.98
EDEN         2.00   2.50   2.00   6.50   2.17    2.00    1.00    1.83     1.50
LUCAS        2.00   2.00   1.70   5.70   1.90    2.00    2.00    1.95     1.78
MITCHELL     2.00   2.00   1.00   5.00   1.67    2.90    2.00    2.06     1.75
MURTY        3.90   3.30   2.00   9.20   3.07    3.00    3.00    3.03     2.87
PRICE        4.00   4.00   4.00  12.00   4.00    4.00    4.00    4.00     4.00
```

- Steps for inserting additional grades

1. Move cursor to Cell D3, this is the cell that will be immediately after the cells that you are going to insert.

2. Type @ I for Insertion. Press C for column. At the bottom of the screen will appear:
   Insert how many (max. 9)--type the desired number of columns that you want to add. RETURN
3. Type columnar headings for additional columns, and type in the missing double dashed lines, (remember to begin typing with a quotation mark (") to identify a label); right justify the new column headings.
4. Format new columns for fixed decimals.
   1) Place cursor at top of column to be formatted--Cell B7.
   2) @ L - Layout (Options: Rows, Columns, Block)
   3) Select Block.
   4) Move cursor to highlight area--B7 to I7 (include all new columns you have added) and move cursor with down arrow as many rows as you have students. RETURN
   5) Select value format. RETURN
   6) Select fixed. RETURN
   7) Indicate number of decimals (2). RETURN
5. Type grades in the appropriate columns and be sure to put a zero in for any production, or grade, not handed in that is to be counted.
6. To speed up the process of numerical entry, turn the recalculator to manual by:
   1) Type @ V to set standard values and rules.
   2) Type R for Recalculate.
   3) Type F for Frequency.
   4) Type M for Manual.

   When finished entering data, be sure to return to automatic calculations by:
   1) Type @ V.
   2) Type R for Recalculate.
   3) Type F for Frequency.
   4) Type A for Automatic.

CHECKLIST FOR END OF DAY

CONTRIBUTOR:
Mary B. Hunt
Robeson County Career Center
Lumberton, NC 28358

NAME ______________________ DATE ______________________

DEFICIENCY FORM

The following checklist for the "end of the day activity" will be used to insure that work stations are left in proper order for the next session. This form is designed only to be used as a daily checklist and evaluation tool.

The care of your work station, equipment, and materials should be a top priority.

____________________ Work station cleaned/dusted each Monday and Friday.

____________________ Computers and printers covered when not in use.

____________________ Master switch turned off in correct order at the end of the day.

____________________ Disks stored in proper section of the disk file.

____________________ Instructional and supplementary materials filed in proper place.

____________________ Magazines returned and stored properly in magazine files.

____________________ Textbook/workbook returned to work station. A .25 penalty will be assessed for ALL ITEMS COLLECTED.

____________________ ABSOLUTELY NO FOOD consumption at systems.

____
Teacher

____
Substitute

PENALTY:
1 deficiency per offense, 5 deficiencies per six weeks will mean -5 from overall grade average.

BIRTHDAY CARDS

CONTRIBUTOR:
Diane S. Isenberg
Glenbrook North High School
Northbrook, IL 60062

Procedures:

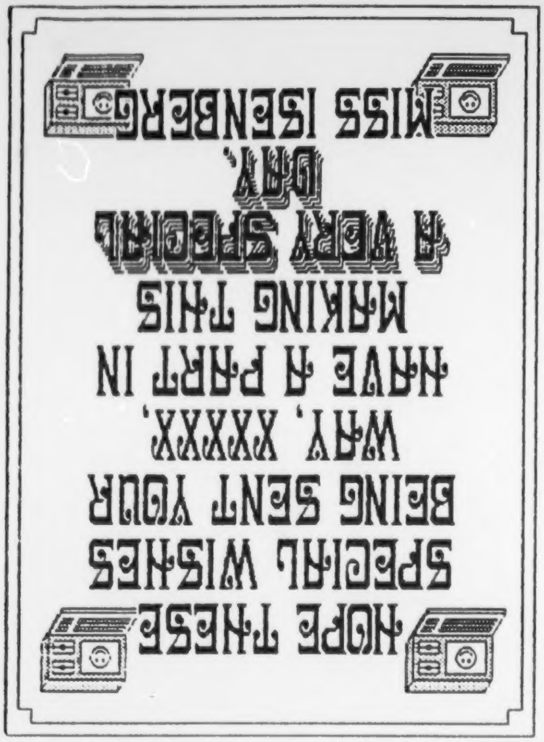
- Have students complete an index card on the first day of class. The information on the card includes, among other things, name, class section, and birthdate.
- Create a data base using any software program. Enter the information contained on the index cards for each student. After all of the information has been entered, sort the records by birthday. (Note: This could be an assignment for students in your office procedures class or another senior class.)
- Print a personal birthday card for each student during the semester. Print Shop (or another similar program) can be used to create these cards. (Note: Create and save an assortment of birthday cards on a disk. In this way, only the names of the students need to be changed.)
- Set up a file for the printed birthday cards coded on the back as to the birthday and class section.
- Distribute the cards on the appropriate day.

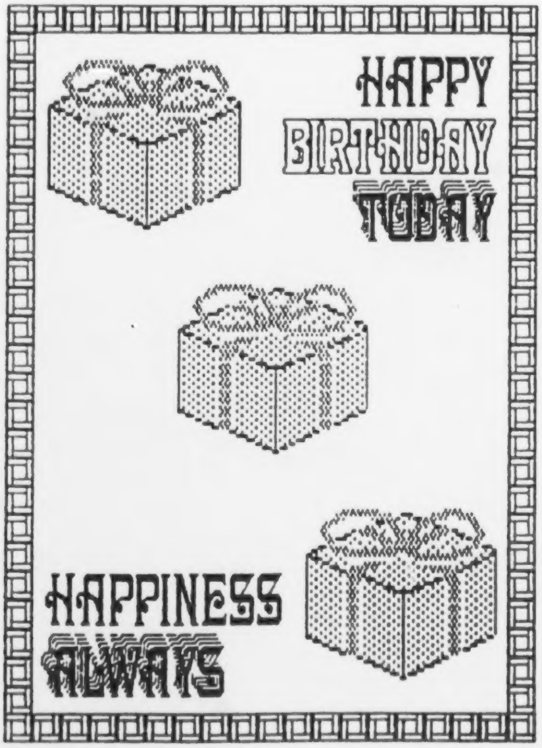
Materials needed:

- Print Shop or similar program
- Data base software

Comments:

- Students are surprised and pleased to receive a personal birthday card from the teacher. A big smile says it all!
- Students can design cards to send to friends or relatives. This can be a nice "break" in the routine in a computer applications, word processing, typing/keyboarding, or another class where computers are available. A network would be best to use in this situation.
- As part of a "promotion" program, students design signs, information sheets, and/or banners extolling the benefits of taking the individual course (or the entire department).
- Students can design notecards that can then be printed on tinted paper and sold as a fund-raising activity.
- "Congratulation cards" can be used for an excellent job done in class.


HOPE THESE
SPECIAL WISHES
BEING SENT YOUR
WAY, XXXXX,
HAVE A PART IN
MAKING THIS
A VERY SPECIAL
DAY.
MISS ISENBERG


HAPPY
BIRTHDAY
TODAY
HAPPINESS
ALWAYS

A DSI ORIGINAL

COMPUTER GRADEBOOK

CONTRIBUTOR:
Diane S. Isenberg
Glenbrook North High School
Northbrook, IL 60062

Procedures:

- After the class list has become firm, create a spreadsheet for the class. Options:
    - -- create separate spreadsheets for each class section, or
    - -- create separate spreadsheet for each subject taught and combine like sections together on one spreadsheet, or
    - -- create separate spreadsheets for different categories within a subject (such as for timed writings, production tests, daily work, and written tests)--with one spreadsheet containing the individual averages of the units.
- Enter formulas for adding/averaging information.
- Enter scores approximately twice a week and make new printouts.
- Final grades at the end of the semester are automatically averaged upon entering the final data.

Materials needed:

- Spreadsheet software program

Comments:

- In a class such as typewriting/keyboarding where many grades are averaged, a program such as this can be a real help. Time is needed to set up the gradebook as well as enter the grades. However, time is saved when it is most needed--at the end of the grading period or when a parent or counselor calls to ask the student's current grade.
- The computer gradebook can be supplemented by a traditional "paper-and-pencil" gradebook.
- By using a computer gradebook, you have a current average grade of each of the students in the class.
- Likewise, you are able to keep statistical records from one year/semester to the next for reference and analysis.

SAMPLE COMPUTER GRADEBOOK

```
========A========B========C========D========E========F========G========H====
 1|STUDENT RECORDS FOR THE SECOND SIX WEEKS, FIRST SEMESTER, 1987-88
 2|Diane Isenberg, Teacher
 3|
 4|
 5|
 6|NAME                   TW1      TW2      TW3      AVG      CLASS AVG
 7|
 8|Mods 1-4                                                       1147
 9|                                                                 76
10|Student A                       89       89       89       89
11|Student B                       75       73       88       79
12|Student C                       85       86       84       85
13|Student D                       57       60       70       62
14|Student E                       77       82       66       75
15|Student F                       82       77       84       81
16|Student G                      100      100       96       99
17|Student H                       73       77       70       73
18|Student I                       78       76       76       77
------------------------------------------------------------------------------
G10: (Value, Layout-F0) @AVG(D10...F10)


Type entry or use @ commands                                    @-? for Help
```

COLOR-CODED DISKETTES

CONTRIBUTOR:
Lillian McCammon
Helena High School
Helena, MT 59601

Procedures:

Identify each period's data diskette with a color-coded label. For example: period 1 = blue; period 2 = green; period 3 = yellow, etc.

The color-coded labels facilitate filing and sorting of student data disks for each class period.

Comments:

This is an easy, quick routine that would be helpful particularly for beginning teachers and/or students.

****

POLICY STATEMENT ON ADHERENCE TO SOFTWARE COPYRIGHT

CONTRIBUTOR:
Glenn Bugni
Unified School District
Antigo, WI 54409

Comments:

- The policy statement provides an example of how school districts can implement a software copyright policy.
- The policy statement could be revised easily to meet the individual needs of a school system.
- SOURCE:
  Antigo Unified School District
  Computer Curriculum Guide

UNIFIED SCHOOL DISTRICT OF ANTIGO
POLICY ON SOFTWARE COPYRIGHT

The intent of the Unified School District of Antigo is to adhere to the provisions of copyright laws in the area of microcomputer programs. Though there continues to be controversy regarding interpretation of those copyright laws, the following procedures represent a sincere effort to operate legally. We recognize that computer software piracy is a major problem for the industry and that violations of computer copyright laws contribute to higher costs and greater efforts to prevent copies and/or lessen incentives for the development of good educational software. All of these results are detrimental to the development of effective educational uses of microcomputers. Therefore, in an effort to discourage violation of copyright laws and to prevent such illegal activities:

1. The ethical and practical problems caused by software piracy will be taught in all schools in the District.
2. District employees will be expected to adhere to the provisions of Public Law 96-517, Section 7(b) which amends Section 117 of Title 17 of the United States Code to allow for the making of a back-up copy of computer programs. This states that "it is not an infringement for the owner of a copy of a computer program to make or authorize the making of another copy of adaptation of that computer program provided:
   a. that such a new copy or adaptation is created as an essential step in the utilization of the computer program in conjunction with a machine and that it is used in no other manner, or,
   b. that such a new copy or adaptation is for archival purposes only and that all archival copies are destroyed in the event that continued possession of the computer program should cease to be rightful."
3. When software is to be used on a disk-sharing system, efforts will be made to secure this software from being copied.
4. Illegal copies of copyrighted programs may not be made or used on school equipment.
5. The legal or insurance protection of the District will not be extended to employees who violate copyright laws.
6. The Computer Coordinator of this school district is designated as the only individual who may sign license agreements for software for schools in the District. (Each school using the software also should have a signature on a copy of the software agreement for local control.)
7. The principal of each school site is responsible for establishing practices which will enforce this policy at the school level.

(Based on the Internal Council for Computers in Education's Suggested District Policy on Software Copyright)

SELECTED TEACHING SUGGESTIONS

CONTRIBUTOR:
Patricia Noble
Kinston High School
Kinston, NC 28501

Overhead Projection Panel

An overhead projection panel is a tremendous asset in teaching students any computer program or language. The panel is placed on the glass platform of the overhead projector and is easily connected by wire to a computer. Any work displayed on the computer monitor is projected through the overhead projector panel as a large image on the screen at the front of the room. An entire class can view at one time an explanation of any program as the teacher works at the computer. (These devices were very expensive at one time but are now being marketed at prices affordable to educational systems.)

Switch Box

Each room in our department that contains computers is arranged in units of two computers to one printer. A switch box (T-switch/A-B switch) is used which sends a signal from the computer being accessed to the printer. This plan has worked better for us than a networking system as some programs were not suitable for networking. We have saved money by purchasing fewer printers.

"Field Trip" from Slide Presentation

An idea that I heard about at a conference is helping me to solve a problem in making students more aware of computer operations in actual businesses:

Some local businesses limit the number of students allowed on field trips to view computer operations. A few businesses do not allow tours. Therefore, I plan, with the aid of our Industry/Education Coordinator, to visit various local businesses and take pictures of different computer equipment and computer operations. A "field" trip from a slide presentation can then be presented to each of my classes. The problems of transportation, etc., is eliminated and a larger number of students are exposed to computer operations. Students also become more aware of career opportunities in the local area.

Updating Software

Changes occur frequently in microcomputer applications software. It is too expensive to purchase new books and disks for each student for each software revision of each software package being taught. Therefore, I teach our application classes by the following plan:

Individualized materials for teaching each program are prepared and placed in a folder. One folder per program is used for each computer along with a program disk for that computer. The computer, folder, and disk are all assigned the same number. Each student throughout the day knows the number for his/her computer and picks up the materials each day upon entering the room and beginning work. Materials are placed in four different locations in the room so that time is not wasted in waiting to gather supplies from one location.

Data Disks

One data disk (to be used with any program disk in microcomputer applications classes) is assigned to each student at the beginning of the year by the same method that a textbook would be assigned in other classes. A number is written on the disk label instead of the student name. The number corresponds to the student ID number in the rollbook. A student is responsible for his/her disk and for returning the disk at the end of the year. Disk boxes are provided in the room for students to store their disks.

Teaching Packets

Individualized teaching packets are prepared for each program I teach in computer application classes. Students work at their own pace to learn the program with my assisting them with their questions. As they complete the program packet, they begin exercises which apply the program commands. Because student ability levels vary widely, numerous exercises are assigned to meet the needs of higher level students while lower ability students are required to complete a minimum number of exercises. Grades are based not only on the number of exercises completed but also on the quality of the work completed.

MICROCOMPUTER STUDENT ACTIVITIES

CONTRIBUTOR:
Mari C. Shaw
Business and Office Education
Old Capitol Building
Olympia, Washington 98504

Purpose: To provide suggestions for student activities related to computer use:

FOUNDATIONS

1. From an encyclopedia, an introductory data processing text, or a computer literacy text, prepare a list of major developments in the history of computers and how they have affected the way business is conducted in the United States.
2. Write to a minimum of two vendors (e.g., IBM, Honeywell) requesting brochures depicting computer equipment that they manufacture. Using these brochures, prepare a bulletin board display.
3. Arrange to visit a computer installation to identify its hardware, view business applications in operation, and observe computer professionals at work. Discuss procedures used by the company to prevent computer-related fraud.
4. Collect articles describing computer-related fraud.
5. From your school or public library, select and examine a minimum of two periodicals written for the computer professional. Identify those articles which discuss aspects of economics as they relate to computers.
6. From an encyclopedia or an introductory data processing text, prepare a list of characteristics of manual, mechanical, unit record and electronic data processing systems.
7. Tour a manufacturing plant (e.g., textile manufacturer, automated warehouse) to determine uses of the computer for production and distribution. Ask questions about the effect of the computer on the company's profits.
8. From a data processing or computer textbook, obtain information about the decreasing cost of computer hardware and the increasing cost of computer software. Identify and list the economic implications for vendors, prospective users and other segments of society.
9. Identify the economic effects of computers on productivity, corporate profits and the work force in the free enterprise system.
10. Interview the manager of a small business that utilizes a computer system. Write a brief description of the computer applications in that business.

ACCOUNTING

1. Start a collection of newspaper and magazine articles that address current issues in computerized accounting.
2. Interview the manager of a small business that utilizes a computer system. Write a brief description of the computer applications in that business.

3. Interview a local banker and/or collect brochures to determine computer applications for the following:
    a. automated teller machine (ATM)
    b. automated clearinghouse (ACH)
    c. magnetic-ink character recognition (MICR)
    d. electronic funds transfer system (EFTS)
4. Visit a computer store to identify ways that microcomputers are used for accounting applications, such as general ledger accounting, payroll and accounts receivable/payable.
5. From an accounting department, collect and examine source documents (e.g., sales tickets, purchase orders, time card) and trace the steps for each from data entry to report generation.
6. For each of the following accounting applications, explain the method for preparing data to be used in an electronic data processing system and describe the forms used in the system:
    a. processing payroll
    b. processing purchases and accounts payable
    c. processing sales and accounts receivable
    d. controlling inventory
7. Compare manual, mechanical, punched card and automated accounting systems with respect to the following considerations:
    a. security
    b. storage capacity
    c. backup and forms retention
    d. system design

WORD PROCESSING

1. Obtain, identify and evaluate computer prepared form letters (e.g., sales, collection letters).
2. Have students conduct a panel discussion based on research they have gathered about office equipment (i.e., word processors, computer console input typewriters, automatic typewriters, electronic mail, telecommunications, reprographics and micrographics).
3. Revise computer messages using acceptable Business English style.
4. Interview a programmer to determine the importance of spelling and syntax.
5. Interview a data processing manager to determine importance of written communications to the work.
6. Arrange to visit a computer installation to identify its hardware, view business applications in operation, and discuss, with information processing professionals, writing skills they need and use to perform effectively and efficiently.
7. Visit a firm that uses word processing computer equipment to learn how records are stored and retrieved in an electronic system.

8. Open a student operated word processing center to service the needs of the school and outside customers.

TELECOMMUNICATION

1. Organize a panel discussion based on research gathered about clerical equipment utilized for telecommunications.
2. Create student journals on telecommunication services utilized and information/data bases accessed.
3. Survey public bulletin boards in the area and compose a directory of offerings available and membership requirements for users.
4. Have the students visit an office that uses telecommunications, electronic mail and/or electronic calendars.
5. Simulate an actual teleconference that students must plan and carry out within their high school or with another high school business class.
6. Access needed information in various data bases to prepare an itinerary of a trip that the class or an individual would like to take.

WORK HABITS

1. Have each student keep a journal of how and when they observed someone lose self-control, either in real life or in a television program situation. Discuss this behavior to determine what could have been done in each situation.
2. Have students keep a calendar and make daily TO DO lists to practice time management techniques.
3. Have students work in teams to redesign your classroom to be ergonomically sound.
4. Have students keep a log sheet of the time it takes them to complete each assignment so they can see how important it is to do things efficiently.
5. Put a different student in charge of leading a relaxation exercise every day to get students in the habit of practicing appropriate relaxation techniques.
6. Put a different student in charge of checking diskettes at the end of the period each day to make sure they have been properly stored.

CAREERS

1. Visit a local police department to determine its use of computers.
2. Visit a law firm to determine the use of computers in legal office applications.
3. Write a letter of application for employment using a word processor.
4. Develop a personal resume utilizing word processing or resume software.
5. Explore careers using telecommunications.
6. Identify at least six positions available in information processing and explain worker characteristics, training and education needed for each.

Source: Microcomputer Curriculum Guidelines, Division of Vocational-Technical and Adult Education Services, Office of the Superintendent of Public Instruction, Old Capitol Building, Olympia, Washington 98504, 1986.

COMPUTER ENRICHMENT HANDBOOK SUPPLEMENT A

■ NATIONAL BUSINESS EDUCATION ASSOCIATION

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National Business Education Association
1914 Association Drive
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COMPUTER ENRICHMENT HANDBOOK

SUPPLEMENT A

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PREFACE

The *Computer Enrichment Handbook, Supplement A* represents the first supplement to the original *Computer Enrichment Handbook*. This supplement is designed to augment the *Handbook*. The same categories used in the *Handbook* were retained in the *Supplement* with the following exceptions: International Business was added to Category 10; Category 12G, Multimedia/Presentation Software/Hypergraphics, was added as a new category. The referee process established for use with the *Handbook* was followed in the selection of the submissions for the *Supplement*.

The Center for Vocational and Adult Education at Auburn University, Auburn, Alabama, under the directorship of Dr. James B. Drake, financially supported the development of *Supplement A*. The senior editor expresses appreciation to graduate assistant Pam Hawkins and to departmental assistants Janice Carmack, Billie Childers, and Faye Pelt for their many hours of dedicated service to this project.

The *Computer Enrichment Handbook, Supplement A* reflects the methods and materials used by the teachers and administrators who shared their ideas. The National Business Education Association in no way endorses or approves the use of specific hardware, software, methods, or materials described in *Supplement A*. Although the subcommittee and the contributors have attempted to be accurate in the keying and preparation of the contributions, the National Business Education Association does not assume any responsibility for the accuracy of the ideas presented in *Supplement A*.

This publication is offered as a service to business educators for use with their classes. Contributions which contain student handouts have been prepared for easy photocopying by the teacher.

The Computer Education Task Force encourages you to submit your computer-related, classroom-tested ideas for future consideration. Guidelines for submitting your enrichment ideas are included in this supplement.

Bonnie Roe White
Senior Editor and Chairperson
Computer Enrichment Activities Subcommittee
of the NBEA Computer Education Task Force

GUIDELINES FOR SUBMITTING COMPUTER-RELATED ENRICHMENT IDEAS

Your time is LIMITED and VALUABLE. We have attempted, therefore, to make it easy for you to send us your ideas.

1. You may send previously prepared materials such as a student handout. We are seeking teacher-prepared, classroom-tested, computer-related ideas. If you submit photocopies, please try to send legible photocopies. We will prepare the material in final format; however, if you have diagrams, schematics, flow-charts, etc., please send a dark enough copy for us to photocopy it without having to redraw the material.

2. If your enrichment idea must be run with specific software, please include the name of the software (and address of the software company if possible). If your contribution is generic to most software packages, you do not need to identify a specific software package.

3. IDEAS DO NOT HAVE TO BE LENGTHY TO BE SUBMITTED. Wherever possible, however, lengthy descriptions should be substituted or reduced by using diagrams, charts, etc.

4. Please provide this information at the beginning of each contribution:

   Category (See Table of Contents for category listing.)
   Title
   Your School
   School Address
   City and State

5. Please add any of the following categories you need to enhance and clarify your ideas:

   Objectives
   Procedures
   Materials Needed (include software information here)
   Comments
   Terminology
   Key/Answers

6. Please include your summer/home address and telephone numbers for work/school and home.

7. Please send to the following address:

   Dr. Bonnie J. White
   Center for Vocational and Adult Education
   Donahue and Thach
   Auburn University, AL 36849-5526

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Cochrane, Donna J.	6
Cubbler, Charlotte D.	12F
Cummings, Kevin L.	11, 12C, 14
Davis, Diane C.	6, 8, 12F
Dearinger, Tracy	11
DeFalco, Carol Nemeth	17
Dickens, Julia	12B
Enghauser, Debbie	12C
Frazell, Jo Ann	12B
Garner, Dennis	12A,12B
Garrett, Norman	4
Glenn, Janet	2
Henson, Mary Kent	4
Hughes, Bob	4
Kennedy, Zann	4
Lundgren, Terry D.	12C
Lydzinski, Richard W.	12C
Mathews, Jo H.	11
McCammon, L.	10
Montanus, Charlotte	12
Montgomery, Lynette	3
Morrison, James L.	4
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Robinson, Donna	17
Rotter, James Jr.	12C
Rupe, Jarrold C.	11
Ryburn, Jean	12E
Schneid, Karen	12F

Contributors (continued)	Categories
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Stulz, Karin M.	12E
Van Stratum, Catherine	9
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Wendt, Debra	12E
Wheeler, Pattie M.	11
Wiggs, Linda Henson	1, 12C
Wilkins, Marilyn	12, 12B
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6. **Office Procedures/Office Management/Records Management**

Cochrane, Donna J. Using Word Processing as a Communication Tool 1
Davis, Diane C. Microcomputer Training Session 4
Scott, Carol R. and Stills, Alma G. Word Processing 7
Sohacki, Pat Supervisor's Assistant 9
Walter, Sue and Young, Kim Ergonomics Project 13

7. **General Business/Basic Business/Introduction to Business**

Pollard, Constance Using the Computer for Business Presentation 1

8. **Shorthand/Machine Transcription**

Davis, Diane C. Dictation/Transcription Activity 1

9. **Business Law**

Van Stratum, Catherine Cooperative Learning 1

10. **Marketing/Business Management/International Business**

McCammon, L. and Pilcher, C. One--Week Unit on Global Business 1
Walter, Sue International Business 4

11. **Computer Literacy/Computer Awareness/Intro to Computers**

Cummings, Kevin L. Testing for DOS Skills 1
Cummings, Kevin L. Tutor DOS 4
Dearinger, Tracy Systems Analysis 6
Matthews, Jo H. Current Computer Happening 10
Rupe, Jarrold C. Developing Personal Command Manuals 12
Wheeler, Pattie M. Computer Scrapbook 15

CATEGORY PAGE

12. Microcomputer Applications/Information Processing

Montanus, Charlotte	Introduction to Windows: A Suggested Outline	1
Steffee, John	Integrating Microcomputer Skills into Science	3
Wilkins, Marilyn	Importing Files--Lotus and WordPerfect	10

12A. Word Processing

Garner, Dennis	Murder, P.C. Wrote	1

12B. Spreadsheets

Burns, William L. and Walz, Patricia J.	Using a Spreadsheet To Prepare an Income Statement	1
Dickens, Julia	Calculating Grade Averages Using Spreadsheets	3
Frazell, Jo Ann	Payroll Exercise	5
Garner, Dennis	Murder P.C. Wrote: Lotus	20
Wilkins, Marilyn	Sorted Telephone List	33

12C. Data Base

Cummings, Kevin L.	Database Mystery	1
Enghauser, Debbie	The Basics of Planning a Database	6
Lundgren, Terry D.	Constructing a Flat-File Database	11
Lydzinski, Richard W.	Student Database	13
Rotter, James, Jr.	Government--Database Interdisciplinary Project	17
Rotter, James, Jr.	Science--Database Interdisciplinary Project	22
Shealy, Ken	Assignment Organizer and Analysis	26
Wiggs, Linda Henson	Ideas for Database Assignments	30

12D. Graphics

Wallace, Ivan	Integrating Paint Graphics into a Text Document	1
Wallace, Ivan	Integrating Analytical Graphics into a Text Document	3

CATEGORY PAGE

12E. Integrated Software

Orr, Claudia L., and Stulz, Karin M. Spreadsheet/Word Processing Integration 1
Ryburn, Jean Using Integrated Software 4
Wendt, Debra Using Integrated Software To Develop a Business Periodicals Listing and Report 10

12F. Desktop Publishing

Cubbler, Charlotte D. Designing and Producing Personal Business Cards 1
Davis, Diane C. Desktop Publishing Project 3
Schneid, Karen Developing a Full--Scale Marketing Plan 5
Seymour, Tom Desktop Publishing 6
Desktop Publishing Subcommittee of the Computer Education Task Force Desktop Publishing Test 9

12G. Multimedia/Presentation Software/Hypergraphics

Abernathy, Kay Restructuring the Curriculum and the Classroom to Teach Telecommunications in Office Administrative Systems 1
Winzurk, Judy D. Integrating Multimedia into the Curriculum 3

13. Networking

Stipp, Deborah M. Checklist to Consider when Installing Networks and Microcomputer Labs 1

14. Telecommunications/Electronic Mail

Cummings, Kevin L. On--Line Data Search 1
Pollard, Constance Introduction to Telecomputing 3
Stipp, Deborah M. Reach Out and Touch Someone Electronically 7

15. Computer Languages

No Additional Activities.

CATEGORY PAGE

16. General Computer Usage

Nantz, Karen S. — Subdirectories?? or Copying Files from One Subdirectory to Another 1

17. Teaching Techniques/Classroom Management

Boyce, Betty L. — Project Assignment Contract 1
De Falco, Carol Nemeth — Computer--Generated Calendar 3
Winzurk, Judy and Robinson, Donna — Equipment Check In/Check Out System 4

Basic Skills

Category 1

ORAL ASSIGNMENT FOR COMPUTER APPLICATIONS

CONTRIBUTOR:
Linda Henson Wiggs
Southeast Missouri State University
Cape Girardeau, MO 63701

Objectives:

- The student will follow oral instructions.
- The student will practice file management skills.

Procedures:

- About once a week, give students an oral assignment. Hand out an assignment sheet on which written instructions have been recorded. These instructions may include margins, headings, page numbering, end notes, etc. Ask students to make several changes such as changing margins, changing footnotes to endnotes, changing page numbers to bottom center instead of top right, searching for a particular word and replacing with another word. The possibilities are endless and can be expanded as the applications become more sophisticated.

- Ask students to recall documents that have been completed in previous assignments, and give oral instructions about making changes in these assignments. This activity forces students not only to apply good listening skills but also to practice good file management skills.

- On the day of the oral assignment, tell students they will be working from oral instructions during the class. Allow time for students to get organized for note taking. Knowing they are responsible for listening the first time an instruction is given seems to make a big difference in students' overall readiness to learn.

Comments:

- I tried this type of assignment because students were always asking me to repeat instructions. It seems essential that students learn to listen and not ask habitually for instructions to be repeated. This activity has been very successful.

Business English/ Communications

Category 2

PROOFREADING CHALLENGE – TEAM EFFORT

CONTRIBUTORS:
Mona J. Casady
Duane R. Moses
Southwest Missouri State University
Springfield, MO 65804-0089

Objectives:

- The student will reinforce spelling and proofreading while developing human relation skills through teamwork.

Procedures:

- Reproduce the two handouts: **CORRECTION MARKS FOR PROOFREADING** and **THE DOCUMENTS – MEMORANDUM AND LETTER**. Distribute them to the students.
- Discuss the importance of accurate proofreading and editing. Working in teams or groups can be helpful in catching spelling or word usage errors.
- Have one student in the group proofread and correct errors in Document 1 while another member proofreads and corrects Document 2. When the students finish, have them switch papers and "go through" the document a second time. When the groups have finished proofreading and correcting, label the time it took the group to complete both documents. The first group to accurately correct all errors is declared the winner. Recognition, such as a certificate, may be provided to the winners.

Materials needed:

- Handouts: **CORRECTION MARKS FOR PROOFREADING** and **THE DOCUMENTS – MEMORANDUM AND LETTER**
- Dictionary
- Word processing software program.

Comments:

- This exercise may be used in a word processing course by having students key the two documents first and then use spell check versus manual proofreading. In addition, this exercise could be adapted for a shorthand/machine transcription course by dictating the documents provided and then having the students transcribe and proofread the documents.
- Business students should be made aware of the importance of preparing accurate documents in the business environment. The teacher should emphasize that the expected business standard is an accurate document.

Solution:

Document #1–Interoffice Memorandum

5 Febuary 1992

CHRIS MARTIN

ACKNOWLEDGMENT OF CONSCIENTOUS SERVICE

Upper management is most conscious of your achievement this year, Chris, in marketing our Tourism line. In surpassing last year's sales record, you applied good judgment and demonstrated much perserverance.

liaison grateful

As a connoisseur of fine luggage, you selections superzede those prepared by previous marketers. As a laison, you accommodate a variety of clientele--some who are greatful but many who are not courteous. Your forebearance during strenuous moments is and example for others.

Having you as a member of our team is a privelege, Chris. The consensus of upper management is to give you the enclosed bonus check in recognition of your extrordinary service.

Lynn Talbot
Regional Marketing Manager

Document #2–Business Letter

5 April 1992

MR DAVID MORTON
INTERNATIONAL FINANCIAL CORPORATION
PO BOX 1250
TUCSON AZ 85702

SPEAKING AT OUR UPCOMING CONFERENCE

Thank you, David, for making a commitment to speak on the occassion of our biennial meeting of the International Business Association. You are scheduled to speak on Thursday, June 20.

personnel

The assessment of our program that occured two years ago was based on a questionnaire that was returned by our personal. Form it we were able to acertain the topics most neccessary to include this year. Your topic "Is Prejudice Noticable When an Immigrant Joins Your Depeartment?" is scheduled to precede he lunch hour. A seperate session will focus on concerns associated with an employee who is transfered to a branch located in a foreign country and chooses to become an emigrant.

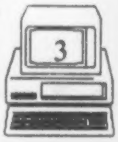
tally

Please fill out the Speaker Information form and detach it at the perferated line. To maximize attendence we will publicize your appearance and do not want any pertinent information to be accidently omitted. Incidentally, David, could you send me a copy of your itinerery so we can make courtesy arrangements?

Miss Renae Carlson
Conference Chairperson

CORRECTION MARKS FOR PROOFREADING

to intently listen; teh	Transpose words or characters
at 9:30 AM She shall arrive on Flight 613.	Insert wording as indicated
We shall be ~~very~~ happy to see you.	Delete; take out
STET He is, ~~of course~~, a ~~loyal~~ customer.	Leave copy as was: STET or ......
The case was ended. ¶ In July we . . .	Start new paragraph
is beautifully illustrated. Most of the photographs . . .	Do not paragraph; run in Or: No ¶
under sell, over come, end the	Close up; no space
# # # alot, stockroom, allright	Leave space between words
Do not indent paragraphs in Modern Simplified letters.	Move to the left
My job as a camp counselor enabled	Move to the right
The decision, however, is to . . .	Insert comma or special punctuation
lc I took English, Math, and ~~T~~yping.	Small letters; lower case: lc or /
C+lc The title was "LEARN TO DICTATE."	Caps and lower case
He came in june to give a book	Under letter—capitalize letter
review of Shepherd of the Hills.	Under word(s): ≡ or ALL CAPS
SS R1	Single space; return carrier once
DS R2	Double space; return carrier twice
TS R3	Triple space; return carrier three times
sp He attends SW Missouri State Univ.	Spell out in full: SW sp or SW sp
She reads The Reader's Digest and	Take out underscore
Dictation Guides	Center horizontally
r Chris s It occured that Kris might loose.	Note various ways to edit
Mary will give the report. Dan will	Insert period
In writing, *Ibid.* means	Underline or italics
PROCEDURES MANUAL	Move up
19 March 1989	Move down



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Miss Renae Carlson
Conference Chairperson

NEW STUDENT VIDEO

CONTRIBUTOR:
Janet Glenn
Highland High School
Cowiche, WA 98923

Objectives:

- The student will work with a group to produce a video that introduces new students to their high school.
- The student will demonstrate effective team work.
- The student will demonstrate oral and written communication skills.

Procedures:

1. Develop a detailed format of:
   a. Areas to be covered--
      1. Activities--sports, clubs, special events (clips taken from sports videos of coaches)
      2. Interview staff--teachers, support staff, principal, etc.
      3. Tour of school and facilities
      4. Daily procedures (getting lunch/breakfast tickets and meal, office functions--attendance slips, tardies, rules, etc.)
   b. Calendar of events, interviews, tapings
   c. Assignment of areas
   d. Group leaders chosen
2. Develop written communications
3. Reserve equipment as needed
4. Complete filming, editing, reviewing, etc.

Materials needed:

- Video camera, VCR, computer, word processing software, video tape, script.

Comments:

- This project was developed to introduce new students to the school environment. The tape also can be dubbed in a language applicable to ethnic populations. Parents, as well as students, may view the tape. Communications students have the opportunity to blend different facets of technology.

MAXIMIZING COMPUTER USAGE IN THE WRITING PROCESS

CONTRIBUTOR:
Constance Pollard
University of Idaho
Moscow, ID 83843

Objectives:

- The student will maximize the use of the computer as a writing tool by becoming proficient in the use of computer writing aids (spell checker, thesaurus, and grammar and style checker) to improve writing skills.

Procedures:

- Give students a business writing problem requiring them to compose letters or a memo report. Documents should be composed entirely on the computer (not by longhand or shorthand methods) and saved on disk.

- Discuss the need for proofing and correcting documents as a step in the writing process. Discuss the role computer writing aids can play to assist in proofing and correcting documents. Demonstrate and discuss the writing aids available in word processing programs and for grammar and style checkers.

- Have students retrieve their documents, run a spell check and use the thesaurus to make corrections and/or modifications. Next, analyze the documents using a grammar and style checker. A readability analysis can be conducted as well as analyzing the documents for punctuation, style, and grammatical errors.

- Have students use a spell check, thesaurus, and grammar and style checker throughout the semester to improve their business documents.

Materials needed:

- Most word processing programs have spell check and thesaurus functions. You may choose from among a number of grammar and style checkers available: Correct Grammar, Prose, RightWriter, Grammatik, etc.

Comments:

- A variation of this project is to determine remediation needs for individual students. Assign specific punctuation and grammar remediation exercises, then analyze writing assignments to determine if progress has been made. Correcting documents submitted on disk can be facilitated greatly through the use of grammar and style checkers.

Accounting/ Bookkeeping/ Recordkeeping

Category 3

TAX CALCULATION

CONTRIBUTOR:
Lynette Montgomery
University of Missouri-Columbia
Columbia, MO 65221

Objectives:

- The student will gain practice using the **LOOKUP** function and the **IF** function in Lotus.
- The student will use the computer for an application similar to those used in the "real world."

Procedures:

- Distribute the handout: **IF AND LOOKUP FUNCTIONS** and a copy of the IRS sheet for the percentage method of calculating payroll taxes.
- Have students follow instructions given in handouts.

Materials needed:

- Handout: **IF AND LOOKUP FUNCTIONS**
- Lotus software
- Tables 1-4 Percentage Method of Withholding, from the IRS Circular E, Employer's Tax Guide

Comments:

- Students using this simulation will not only apply previous learning to a new situation but will also see how payroll taxes can be calculated using the Lotus spreadsheet rather than designing a special program to do this. To make it more realistic, the added component of withholding allowances could be added. Students in advanced courses familiar with payroll should be able to complete this exercise with little help from the instructor.
- This simulation is used for students in an application class which has already used the LOOKUP function in another problem. The IF function may be new to students. The students generally have had some accounting so the need to review payroll taxes is minimal.

Solution:

- The key to this problem and the cell formulas follow:

TABLE 4--if the payroll period with respect to an employee is monthly

Single

OVER--	BUT NOT OVER	BASE TAX	PLUS	OF THE AMT OVER
104	1800		0.15	104
1800	4213	254.40	0.28	1800
4213		930.04	0.41	4213

Married

OVER--	BUT NOT OVER	BASE TAX	PLUS	OF THE AMT OVER
296	3129		0.15	296
3129	7142	424.95	0.28	3129
7142		1548.59	0.31	7142

UNCLE SAM'S TAX SERVICE
TAX LIABILITY--(CURRENT DATE)
FOR
MONTGOMERY'S MARKETING SERVICE

NAME	MARITAL STATUS	SALARY	BASE TAX	PLUS	OF THE AMT OVER	TAX LIABILITY
ASHER	0	3300	254.40	0.28	1800.00	674.40
CONNERS	1	1500	0.00	0.15	296.00	180.60
CARLILE	0	3490	254.40	0.28	1800.00	727.60
DELANEY	1	2760	0.00	0.15	296.00	369.60
HOLMES	1	1200	0.00	0.15	296.00	135.60
LAMMERS	0	4210	254.40	0.28	1800.00	929.20
SNYDER	1	5450	424.95	0.28	3129.00	1074.83
TINNER	0	1875	254.40	0.28	1800.00	275.40
UTZ	0	1950	254.40	0.28	1800.00	296.40
WHITE	1	7500	1548.59	0.31	7142.00	1659.57

Formula used to calculate Asher's tax liability follows:

```
A38:  ASHER
B38:  0
C38:  3300
D38:  (F2) @IF($B38=0,@VLOOKUP($C38,$A$10..$E$12,2),@VLOOKUP($C38,$A$19..$E$21.2))
E38:  (F2) @IF($B38=0,@VLOOKUP($C38,$A$10..$E$12,3),@VLOOKUP($C38,$A$19..$E$21.3))
F38:  (F2) @IF($B38=0,@VLOOKUP($C38,$A$10..$E$12,4),@VLOOKUP($C38,$A$19..$E$21.4))
G38:  (F2)  (C38-F38)*E38+D38
```

IF AND LOOKUP FUNCTIONS

UNCLE SAM'S TAX SERVICE would like to use the Tables for Percentage Method of Withholding to compute the tax liability for monthly employees of the firms they serve. For this particular assignment you will be preparing the tax liability for **MONTGOMERY'S MARKETING SERVICE**.

1. Prepare two tax tables using the information on Table 4, one for single persons and another for married. The entire heading shown should be used for the heading. Column headings should be as shown below:

OVER	BUT NOT OVER	BASE TAX	PLUS	OF THE AMT OVER

2. The employee information given below provides a column for marital status in which an 0 has been placed to indicate single and 1 to indicate married. Page down once to enter the following information:

```
UNCLE SAM'S TAX SERVICE
TAX LIABILITY--(CURRENT DATE)
FOR
MONTGOMERY'S MARKETING SERVICE
```

NAME	MARITAL STATUS	SALARY	BASE TAX	PLUS	OF THE AMT OVER	TAX LIABILITY
ASHER	0	3300				
CONNERS	1	1500				
CARLILE	0	3490				
DELANEY	1	2760				
HOLMES	1	1200				
LAMMERS	0	4210				
SNYDER	1	5450				
TINNER	0	1875				
UTZ	0	1950				
WHITE	1	7500				

3. Using an @IF(ms=0,@VLOOKUP(etc.),@VLOOKUP(etc.)), find for each person BASE TAX, PLUS, and AMOUNT OVER.

4. Enter a formula to compute the TAX LIABILITY:
HINT: (salary - amt over) x plus + base tax
NOTE: "PLUS" = tax bracket rate

5. Print (1) entire spreadsheet, (2) spreadsheet without the lookup tables, and (3) contents of the cells.

AUTOMATIC CALCULATING STEPS

CONTRIBUTOR:
Sue Phipps
Shiloh High school
Hume, IL 61932

Objectives:

- The student will learn that a spreadsheet will complete automatic calculations in accounting statements when using "what if" situations.

Procedures:

- Distribute handout: **AUTOMATIC CALCULATING STEPS** and have students follow the steps in the handout.

Materials needed:

- Spreadsheet software and handout: **AUTOMATIC CALCULATION STEPS**

Comments:

- This method lets the students see the figures entered and the effect on the total when changes are made in the figures.

Solution:

Jones Office Equipment
Income Statement
For Period Ending 01/31/XX

Revenue		
Sales	$16,476.70	
Sales Discount	(64.15)	
Total Revenue		$16,412.55
Cost of Goods Sold		
Beginning Inventory	$26,225.80	
Purchases	$5,743.01	
Purchases Returns & Allow	($70.00)	
Purchases Discount	($4.94)	
Less Ending Inventory	($22,742.00)	
Cost of Goods Sold		$9,151.87
Gross Profit		$7,260.68
Expenses		
Advertising Expense	$3,741.07	
Insurance Expense	$82.00	
Rent Expense	$490.00	
Supplies Expense	$64.12	
Utilities Expense	$331.10	
Total Expenses		$4,708.29
Net Income From Operations		$2,552.39

AUTOMATIC CALCULATING STEPS

1. Position the cursor at cell A6; key/enter the word Revenue.

2. Draw a line under this title. In cell A7 use the hyphen (-) as a label to underline the word **Revenue.**

3. In cell B8 key/enter **Sales** and move across to column G. Change the column width so all numbers can be entered within one column. Change the width of column G from 9 to 12 spaces. Also, set column G for dollars and cents. Now enter the amount for **Sales,** 16476.70.

4. In cell B9 key/enter **Sales Discount.** Enter its amount, -64.15.

5. In cell G10, put an underline as you did in Step 2.

6. In cell B11 key/enter **Total Revenue.** In cell H11 change the column width to 12 spaces and the format to dollars and cents as you did in column G. To automatically get this total, enter the formula @SUM(G8...G9). The **TOTAL REVENUE** should appear at $16,412.55.

7. Beginning in cell A13, key/enter **Cost of Goods Sold** and underline it beginning in cell A14.

8. In cell B15, key/enter **Beginning Inventory** and its amount, 26225.80, in column G.

9. In cell B16, key/enter **Purchases** and its amount, 5743.01, in cell G16.

10. In cell B17, key/enter **Purchases Returns & Allow** and its amount, -70.00, in cell G18.

11. In cell B18, key/enter **Purchases Discount** and its amount, -4.94, in cell G17.

12. In cell C19 key/enter **Less Ending Inventory**. Enter its amount, -22742.00, in cell G19, and an underline in cell G20.

13. In cell B21, key/enter **Cost of Goods Sold.** The total of the above five amounts will go in column H. The formula is @SUM(G15...G19). **The Cost of Goods Sold** should appear as $9,151.87. Place an underline in cell H22.

14. In cell B23, key/enter **Gross Profit.** Move to cell H23. To get the amount of **Gross Profit,** subtract the **Cost of Goods Sold** from **Total Revenue.** Enter the formula +H11-H21. The amount $7,260.68 should appear.

15. In cell A25, key/enter **Expenses.** In cell A26, place an underline under **Expenses.**

16. Starting in cell B27, key/enter the following expenses with their amounts in column G. **Advertising Expense** 3741.07; **Insurance Expense** 82.00; **Rent Expense** 490.00; **Supplies Expense** 64.12; **Utilities Expense** 331.10. Put an underline in cell G32.

17. In cell B33, key/enter **Total Expenses.** Add all the expenses to get the total. In cell H33, key enter the formula @SUM(G27...G31). The total should appear as $4,708.29. Place an underline under the total amount.

18. In cell B35, key/enter **Net Income From Operations.** Subtract **Total Expenses** from **Gross Profit.** Key enter the formula +H23-H33 in cell H35. The total is $2,552.39.

19. In cell H36, instead of using the hyphen to underline, use the equals sign (=) for double lines under the total amount.

20. Use good judgment to center the three-line heading, **Jones Office Equipment; Income Statement; for Period Ending 01/31/xx,** at the top of the spreadsheet.

21. Save the problem and print one copy.

22. We will now see how the spreadsheet does automatic calculations.

    What would happen if sales people sold $17,000 worth of merchandise instead of $16,476.70? Change the **Sales** to $17,000 and watch these changes:

    Total Revenue from $16,412.55 to $16,935.85
    Gross Profit from $7,260.68 to $7,783.98
    Net Income from $2,552.39 to $3,075.69

    Our company would increase its net profit if our sales people sold more!

23. What happens if our beginning inventory starts at $26,500.00 worth of merchandise instead of $26,225.80? Change the **Beginning Inventory** to $26,500.00 and watch these changes:

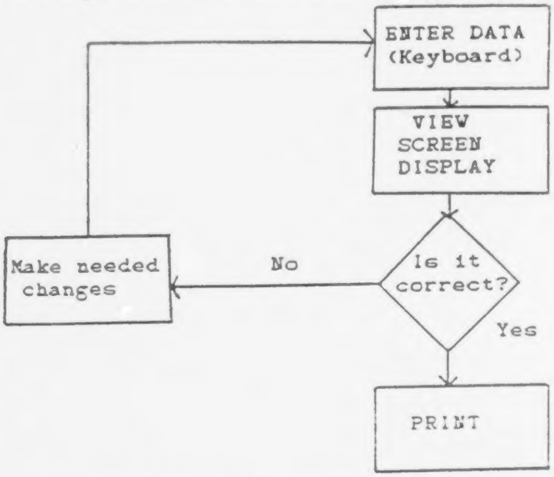
    Cost of Goods Sold from $9,151.87 to $9,426.07
    Gross Profit from $7,783.98 to $7,509.78
    Net Income from $3,075.69 to $2,801.49

    Our profit decreases if we have more merchandise on hand to sell and we do not get it sold!

COMPUTERIZED ACCOUNTING HANDOUT

CONTRIBUTOR:
Carol Yacht
Yavapai College
Clarkdale, AZ 86324

The following general procedure is used when completing entries using a computer:[1]


ENTER DATA (Keyboard)
VIEW SCREEN DISPLAY
Is it correct?
No
Make needed changes
Yes
PRINT

THE COMPUTER ACCOUNTING CYCLE

1. Chart of Accounts
2. Journalize entries
3. Post to the ledger
4. Unadjusted Trial Balance
5. Journalize and post adjusting entries
6. Adjusted Trial Balance
7. Income Statement
8. Balance Sheet
9. Journalize and post closing entries
10. Post closing Trial Balance

---

[1] From the User's Manual for CYMA General Ledger System Plus, pages 4-5. Reprinted with the permission of the publisher, Glencoe Division (Macmillan/McGraw-Hill).

Consumer Economics/ Personal Finance/ Business Math

Category 4

COMPUTERIZED BUSINESS MATH SKILLS TUTORIAL AND PRACTICE

CONTRIBUTOR:
Evelyn Alpers
Morgan County R-I
Stover, MO 65078

Objectives:

- The student will review business math skills instruction and demonstrate improved ability to solve business math problems including division and multiplication of fractions; formulas for solving word problems (commissions, discounts, solving for unknown values); simple and compound interest; ratios; wages; banking; and review of word problems applying the formulas.

Procedures:

- Prepare the disk by key entering the following files in BASIC: MTFRACT; DDFRACT; PRB; PRACPRB; INTEREST; COMPOUND; RATIO; WAGES; BANKING; REVPRB; CLOSE. (The contents of these files are listed later.)
- Distribute the handout: **INSTRUCTIONS FOR USING THE BUSINESS MATH TUTORIAL AND PRACTICE DISK.**
- Have students complete the tutorial and practice disk following instructions as they appear on the screen.

Materials needed:

- Tutorial disk containing the BASIC files listed.
- Handouts: **INSTRUCTIONS FOR USING THE BUSINESS MATH TUTORIAL AND PRACTICE DISK**
- Paper and pencil for performing some calculations

Comments:

- The materials in this project are designed to be used on IBM, Tandy, or compatible computers. Units are designed to review principles and procedures for solving business math problems. Most of the units have practice problems for students to improve their problem solving abilities.

- Students use pencil and paper for some calculations. As they work the problems, students need to determine an answer before responding to the questions on the screen. The author does not allow the use of calculators for this work as one of the purposes is to enhance the student's logic and calculation skills. In addition, a calculator used too closely to the computer can occasionally create problems in the magnetic memory system of the computer.

- Students can be given a pretest on these math skills, use the computer tutorial and practice, and be given a posttest. Many students who are quite accomplished in higher math skills have difficulty with practical business math problems; however, as high school juniors and seniors, they are very reluctant to admit to having any difficulty. These computer programs and practice exercises were written to give students an opportunity to sharpen their practical business math skills.

- These computer exercises have been tested on approximately 200 eleventh and twelfth grade students who have shown an average 50 percent improvement rate in these business math skills.

- These programs require BASIC computer language capability and will work with a low-memory capacity. The author has also written these programs for Apple and Radio Shack TRS-80 computers.

- Editor's comment: Using the spacing as shown in the individual program statements will help reduce the wrapping of words between lines on the computer screen. Additional spaces may be added in some program statements to avoid splitting words.

INSTRUCTIONS FOR USING THE BUSINESS MATH TUTORIAL AND PRACTICE DISK

PROCEDURES: Turn your computer on; at the A> prompt, key BASIC OR BASICA and depress Enter. The screen will display "OK" and a blinking cursor. Insert the Math Disk in Drive B; key LOAD"B:MTFRACT"; depress Enter/Return. At the "OK" message key RUN. The program should now be loaded and running.

This business math unit is designed to work through from the beginning to the end and will move automatically from one file to another. However, if you get interrupted you can key LOAD"B:(Filename)" to start with any part of the business math program. The B: represents the name of the disk drive holding the tutorial disk. The filename will be one of the names from the list of files at the end of this handout. (Note: DO NOT TYPE THE PARENTHESES IN THE FILENAME.)

If you do not finish all the units at one time or if you want to repeat a unit, simply bring your computer up to A> and key BASIC or BASICA. At the "OK" message, key LOAD"B:(Filename)". When the OK message appears again, key RUN. You may now start at any section you choose. You may also return to any section and review the business math tutorial and practice at any time. As you work through the material, you will be asked to answer questions occasionally. Key your answer and depress Enter. Prior to depressing the Enter key, you can use the back arrow, then key the correct number over another number. DO NOT PUT COMMAS OR DOLLAR SIGNS IN YOUR ANSWERS.

After your have completed the tutorial and are ready to quit, either end that section or depress BREAK (CONTROL/BREAK on some computers) you will get the "OK" and flashing cursor. Key SYSTEM and depress ENTER/RETURN. Remove your disk and turn off your computer. Place your disk in its paper jacket and return the disk to its proper storage area.

The following is a list of the filenames in the order they will automatically load in the program. A brief explanation of each file is also given.

Filename	Explanation
MTFRACT	Practice multiplying fractions
DDFRACT	Practice dividing fractions
PRB	Formulas and explanations to solve word problems, problems involving commissions, discounts, unknown values, etc.
PRACPRB	Practice solving word problems using PRB formulas
INTEREST	Formulas and practice to determine simple interest
COMPOUND	Interest compounded, formulas, and explanation
RATIO	Explanations and calculations to use ratio to determine unknown amounts in related numbers
WAGES	Explanations and practice determining Gross Pay, Deductions, and Net Pay
BANKING	Problems, explanation, and practice determining checkbook balances and bank reconciliations
REVPRB	A review of the formulas for word problems using part, rate and base calculation

BASIC PROGRAMS

MTFRACT.BAS

```
   1  CLS:KEY OFF:LOCATE 12,20:PRINT "MULTIPLYING FRACTIONS":LOCATE 15,1
   2  PRINT "THIS IS TO TEST YOUR KNOWLEDGE IN MULTIPLYING FRACTIONS"
   3  PRINT:PRINT "ENTER ANSWERS IN THE X/Y FORMAT."
   4  PRINT "REMEMBER: REDUCE WHENEVER POSSIBLE"
   5  PRINT:PRINT "THE X IS THE NUMERATOR"
   6  PRINT "THE Y IS THE DENOMINATOR"
   7  PRINT:PRINT "PRESS ANY KEY TO CONTINUE"
   8  IF INKEY$="" THEN 8
  10  REM MULTIPLING FRACTIONS
  20  CLS
  30  CLEAR 1000
  40  P$="##   ##"
  50  Q$="##   ##"
  60  DIM ONE(15), TWO(15), THREE(15), FOUR(15), ANSWERS(15)
  65  GOSUB 5000:REM FILL
  70  FOR Z= 0 TO 13
  75  IF ONE(Z)=10 THEN GOTO 1000
  79  X=0
  80  CLS:LOCATE 12,5
  90  PRINT USING PS;ONE(Z),TWO(Z)
  95  LOCATE 13,5
 100  PRINT "----  * ----"
 105  LOCATE 14,5
 110  PRINT USING Q$;THREE(Z),FOUR(Z)
 120  PRINT
 130  INPUT "WHAT IS THE ANSWER";IA$
 140  IF IA$<>ANSWER$(Z) THEN X=X+1:PRINT "SORRY":S=S+1:GOTO 150
 145  IF IA$=ANSWER$(Z)THEN PRINT "THAT IS CORRECT":C=C+1:GOTO 160
 150  IF X<>2 THEN GOTO 80 ELSE PRINT "THE CORRECT ANSWER IS ";ANSWER$(Z):W=W+1
 160  INPUT "PRESS ENTER TO CONTINUE";Z$
 170  NEXT Z
1000  REM END
1010  CLS
1020  LOCATE 10,10
1030  PRINT "NUMBER TOTAL CORRECT IS ";C
1040  LOCATE 12,10
1050  PRINT "NUMBER CORRECT ON THE SECOND TRY IS ";S
1060  LOCATE 14,10
1070  PRINT "NUMBER WRONG IS ";W
1080  GOSUB 4000
1110  PRINT "MAKE SURE DISK 1 IS IN DRIVE B TO CONTINUE"
1120  PRINT:PRINT "PRESS ANY KEY TO CONTINUE"
1130  IF INKEY$="" THEN 1130
1140  ON ERROR GOTO 1160
1150  CHAIN "B:DDFRACT",ALL
1160  CLS
1170  PRINT "DISK 1 IS NOT IN DRIVE B"
1180  PRINT"PLEASE PUT IT IN TO CONTINUE"
1190  GOSUB 4000
1120  GOTO 1140
1999  END
2000  DATA 3,3,8,5,"9/40"
2010  DATA 5,7,16,8,"35/128
2020  DATA 15,3,16,4,"45/64"
2030  DATA 19,5,24,6,"95/144"
2040  DATA 7,6,8,7,"3/4"
2050  DATA 15,32,16,45,"2/3"
2060  DATA 5,7,9,12,"35/108"
2070  DATA 2,16,3,25,"32/75"
2080  DATA 9,7,10,8,"63/80"
2090  DATA 3,3,5,16,"9/80"
3000  DATA 5,9,9,10,"1/2"
3010  DATA 7,4,16,5,"7/20"
3020  DATA 4,2,5,3,"8/15"
```

```
3030  DATA 2,7,9,11,"14/99"
3040  DATA 100,100,100,100,"EOD"
4000  REM *** PAUSE ***
4010  PRINT
4020  PRINT "PRESS ANY KEY TO CONTINUE"
4030  IF INKEYS="  " THEN 4030
4040  CLS
4050  RETURN
5000  REM DIM AND FILL
5010  FOR Z = 0 TO 14
5020  IF ONE(Z)=1OO THEN Z=Z-1:GOTO 5999
5030  READ ONE(Z),TWO(Z),THREE(Z),FOUR(Z),ANSWERS$(Z)
5040  NEXT Z
5999  RETURN
```

DDFRACT.BAS

```
  10  CLS:KEY OFF:LOCATE 12,20:PRINT "DIVIDING FRACTIONS":LOCATE 15,1
  20  PRINT "THIS IS TO TEST YOUR KNOWLEDGE IN DIVIDING FRACTIONS"
  30  PRINT:PRINT "ENTER ANSWERS IN THE X/Y FORMAT."
  40  PRINT "REMEMBER: REDUCE WHENEVER POSSIBLE"
  50  PRINT:PRINT "THE X IS THE NUMERATOR"
  60  PRINT "THE Y IS THE DENOMINATOR"
  70  PRINT:PRINT "PRESS ANY KEY TO CONTINUE"
  80  IF INKEY$="" THEN 80
  90  REM DIVIDING FRACTIONS
 100  CLS
 110  CLEAR 1000
 120  P$="##       /   ##"
 130  Q$="##    /     ##"
 140  DIM ONE(15),TWO(15),THREE(15),FOUR(15),ANSWERS$(15)
 150  GOSUB 2150:REM FILL
 160  FOR Z=0 TO 13
 170  IF ONE(Z)=10 THEN GOTO 320
 180  X=0
 190  CLS:LOCATE 12,5
 200  PRINT USING P$;ONE(Z),TWO(Z)
 210  LOCATE 13,5
 220  PRINT "----   /   ----"
 230  LOCATE 14,5
 240  PRINT USING Q$;THREE(Z),FOUR(Z)
 250  PRINT
 260  INPUT "WHAT IS THE ANSWER";IA$
 270  IF IA$<>ANSWERS$(Z) THEN X=X+1:PRINT "SORRY, THAT IS NOT CORRECT ":FOR D=1 TO 500:NEXT D:S=S+1
 280  IF IA$=ANSWERS$(Z)THEN PRINT "THAT IS CORRECT":C=C+1:X=O:GOTO 300
 290  IF X<>2 THEN GOTO 190 ELSE PRINT "THE CORRECT ANSWER IS ";ANSWERS$(Z):W=W+1
 300  INPUT "PRESS ENTER TO CONTINUE";Z$
 310  NEXT Z
 320  REM END
 330  CLS
 340  LOCATE 10,10
 350  PRINT "NUMBER TOTAL CORRECT IS ";C
 360  LOCATE 12,10
 370  PRINT "NUMBER CORRECT ON THE SECOND TRY IS ";S
 380  LOCATE 14,10
 390  PRINT "NUMBER WRONG IS ";W
 400  GOSUB 2210
 410  GOTO 6000
2000  DATA 3,3,8,5,"5/8"
2010  DATA 5,7,16,8,"5/14"
2020  DATA 15,3,16,4,"5/4"
2030  DATA 19,5,24,6,"19/20"
2040  DATA 7,6,8,7,"49/48"
2050  DATA 15,32,16,45,"875/512"
2060  DATA 5,7,9,12,"60/63"
2070  DATA 2,16,3,25,"25/24"
2080  DATA 9,7,10,8,"36/35"
2090  DATA 3,3,5,16,"16/5"
2100  DATA 5,9,9,10,"50/81"
2110  DATA 7,4,16,5,"35/64"
2120  DATA 4,2,5,3, "6/5"
```

```
2130  DATA 2,7,9,11,"22/63"
2140  DATA 100,100,100,100,"EOD"
2150  REM DIM AND FILL
2160  FOR Z = 0 TO 14
2170  IF ONE(Z)=100 THEN Z=Z-1:GOTO 2200
2180  READ ONE(Z),TWO(Z),THREE(A),FOUR(Z),ANSWER$(Z)
2190  NEXT Z
2200  RETURN
2210  REM *** PAUSE ***
2200  PRINT
2230  PRINT"PRESS ANY KEY TO CONTINUE"
2240  IF INKEY$="" THEN 2240
2250  CLS
2260  RETURN
6000  PRINT  "MAKE SURE DISK 1 IS IN DRIVE B TO CONTINUE"
6010  PRINT:PRINT "PRESS ANY KEY TO CONTINUE"
6020  IF INKEY$="" THEN 6020
6030  ON ERROR GOTO 6050
6040  CHAIN "B:PRB",ALL
6050  CLS
6060  PRINT "DISK 1 IS NOT IN DRIVE B"
6070  PRINT"PLEASE PUT IT IN TO CONTINUE"
6080  GOSUB 2210
6090  GOTO 6030
```

PRB.BAS

```
 10 CLS:PRINT "BUSINESS WORKERS PERFORM CALCULATIONS INVOLVING PERCENTS EVERYDAY!"
 20 PRINT "ONE BASIC EQUATION IS USED TO SOLVE PROBLEMS INVOLVING TAXES, COMMISSIONS, DISCOUNTS AND
    INTEREST."
 30 PRINT
 40 PRINT"STUDY AND LEARN THE FOLLOWING FORMULAS CAREFULLY AND THESE CALCULATION! WILL BE EASIER FOR YOU."
 50 PRINT"   THE ASTERISK (*) REPRESENTS MULTIPLICATION AND"
 60 PRINT"   THE DIAGONAL (/) REPRESENTS DIVISION ON THE COMPUTER."
 70 PRINT"   THE FORMULA IS:"
 80 PRINT"                    PERCENT(part)=RATE * BASE (P=R*B) "
 90 PRINT"THIS PERCENTAGE IS ALSO CALLED THE PART OF THE WHOLE AMOUNT.  USE THE TERMS PART, RATE AND BASE
    TO NAME THESE SEGMENTS OF YOUR PROBLEM IN THESE EXERCISES."
100 GOSUB 810
110 PRINT"RATE IS THE HUNDREDTHS OF BASE AND IS USUALLY STATED AS A PERCENT.  FOR EXAMPLE 25% OR .25
    DECIMAL FORM."
120 PRINT "RATE OR PERCENT IS THE QUOTIENT (result of division) OF PART DIVIDED BY BASE    (whole)."
130 PRINT "BASE IS THE WHOLE AMOUNT."
140 PRINT "BASE IS THE NUMBER OR QUANTITY OF WHICH THE RATE (percent) IS TAKEN."
150 [50 PRINT "BASE IS THE QUOTIENT (result of division) OF THE PART DIVIDED BY THE RATE.  AN EXAMPLE ---
    12 is 25% of 48--- THE 48 IS THE BASE, THE 12 IS THE PART AND THE 25% IS THE RATE."
160 PRINT "IN CALCULATIONS INVOLVING PERCENTAGES TWO OF THESE WOULD BE KNOWN, THE UNKNOWN PART YOU WILL
    ANSWER AS A 0."
170 PRINT
180 PRINT"THE FOLLOWING FORMULAS ARE USED TO SOLVE THESE PROBLEMS."
190 PRINT"           P=B*R (Part=Base * Rate)"
200 PRINT"           B=P/R (Base=Part / Rate)"
210 PRINT"           B=P/R (Base=Part / Rate)"
215 PRINT
220 PRINT"READ THE PROBLEM AND DETERMINE THE TWO KNOWN QUANTITIES AND THEN USE THEIR       VALUES IN THE
    PROPER PLACE.  PUT A 0 IN FOR THE UNKNOWN VALUE."
230 PRINT"AFTER YOU HAVE SUBSTITUTED THE KNOWN VALUES AND SOLVED THE PROBLEM YOU SHOULD THEN BE ABLE TO
    APPLY THE CORRECT FORMULAS AND FIND THE UNKNOWN QUANTITY
240 GOSUB 810
250 PRINT"EXAMPLE PROBLEM:  IF A CLASS HAS 40 PEOPLE IN IT AND 30% ARE FEMALE.  HOW MANY ARE FEMALE?"
260 PRINT"SUBSTITUTE THE KNOWN VALUES IN THE FORMULA.  P(part)=40(base)*.30(rate).        THE ANSWER WILL
    BE P (part) WHICH IS 12."
270 PRINT"USING THE SAME TYPE OF PROBLEM BUT KNOWING THAT THERE ARE 12 FEMALE STUDENTS REPRESENTING 30
    PERCENT OF THE TOTAL.  HOW MANY STUDENTS ARE THERE?"
280 PRINT"SUBSTITUTE THE KNOWN VALUES IN THE FORMULA BASE(whole)=12(part)/.30(rate).      THE ANSWER WILL
    BE B (base) WHICH IS 40."
290 PRINT
300 PRINT"ANOTHER EXAMPLE:  IF 8 STUDENTS IN A CLASS OF 24 ARE FEMALE, WHAT PERCENT ARE   FEMALE?"
310 PRINT"SUBSTITUTE THE KNOWN VALUES IN THE FORMULA RATE=8(part)/24(base).  THE ANSWER WILL BE R (rate)
    WHICH IS 33.3% or 33%."
320 GOSUB 810
```

```
330 CLS:REM-------------------------PROBLEMS-----------------------------------
340 PRINT"A REAL ESTATE SALESMAN EARNS A COMMISSION OF 10% ON A HOME WHICH IS SOLD FOR     $60,000.  WHAT
    AMOUNT DOES HE EARN?"
350 GOSUB 670
360 PRINT"IF YOU USE A CREDIT CARD AND PAY A FINANCE CHARGE OF 16% ON A BALANCE F $750,  WHAT AMOUNT DO
    YOU PAY FOR THE CREDIT.  HINT THE WORD IS FOLLOWED BY THE BASE   (whole amount)."
370 GOSUB 670
380 PRINT"IF YOU OWN A BUSINESS PROPERTY VALUED AT $150,000 AND PAID $2,000 IN TAXES, WHAT RATE OF TAX DID
    YOU PAY?"
390 GOSUB 670
400 PRINT "16 IS WHAT PERCENT (rate) OF 96"
410 GOSUB 670
420 PRINT "40 IS WHAT PERCENT (rate) OF 30"
430 GOSUB 670
440 PRINT "THE AMOUNT OF A DISCOUNT ON A COMPUTER IS $240.  THE RATE IS 20%, WHAT IS THE   LIST PRICE
    (base) OF THE COMPUTER?"
450 GOSUB 670
460 PRINT "YOUR LOCAL BANK PAID YOU A TOTAL OF $800 INTEREST FOR ONE YEAR ON YOUR DEPOSIT AT THE RATE
    OF 6%.  HOW MUCH DID YOU HAVE DEPOSITED IN THE BANK?"
470 GOSUB 670
480 PRINT "TO CALCULATE PERCENT (rate) OF AN INCREASE OR DECREASE FOLLOW THE SAME FORMULAS."
490 PRINT "EXAMPLE:  IF THE KEYBOARDING SECTION IN THE WORD PROCESSING DIVISION WANTED TO  INCREASE THEIR
    PRODUCTIVITY BY 6% AND THEY ARE CURRENTLY PRODUCING 400 LINES.  HOW MANY ADDITIONAL LINES WILL THEY
    NEED TO PRODUCE?"
500 GOSUB 670
510 PRINT "DECREASE (part)=BEGINNING AMOUNT (base)-ENDING AMOUNT"
520 PRINT "TO FIND PERCENT(rate) OF DECREASE FIND THE AMOUNT OF DECREASE AND APPLY THE FORMULA
    Rate=Part/Base. <USE YOUR OWN VALUES>"
530 INPUT "BEGINNING AMOUNT";BA:INPUT "ENDING AMOUNT";E:P=BA-E:R=P/BA
540 PRINT:PRINT "DECREASE=";P:PRINT"RATE=";R
545 PRINT
550 INPUT " DO YOU WANT TO REPEAT THESE EXPLANATIONS OF FORMULAS AND EXAMPLE PROBLEMS";A$
560 IF A$="Y" THEN 10
570 CLS
580 PRINT "PLEASE MAKE SURE DISK 1 IS IN DRIVE B TO CONTINUE!!"
590 OSUB 810
600 ON ERROR GOTO 620
610 CHAIN "B:PRACPRB",ALL
620 CLS
630 PRINT "DISK 1 IS NOT IN DRIVE B "
640 PRINT "PLEASE PUT IT IN TO CONTINUE"
650 GOSUB 810
660 GOTO 600
670 REM *** PROBLEM CHECK ***
680 PRINT "ANSWER THE FOLLOWING, USE 0 FOR THE UNKNOWN NUMERIC ANSWER."
690 PRINT
700 INPUT "WHAT IS THE WHOLE AMOUNT?";B:INPUT "WHAT IS IT CALLED";B$
710 PRINT
720 INPUT "WHAT IS THE RATE";R:INPUT"WHAT IS IT CALLED";R$
730 PRINT
740 INPUT "WHAT IS THE PART";P:INPUT "WHAT IS IT CALLED";P$
750 PRINT
760 IF B=0 THEN B=P/R ELSE IF R=0 THEN R=P/B ELSE IF P=0 THEN P=B*R
765 R=(R*100):R=INT(R)
770 PRINT B$" IS ";B:PRINT R$ " IS ";R "%"
771 PRINT P$" IS ";P
780 PRINT
790 GOSUB 810
800 RETURN
810 REM *** PAUSE ***
820 PRINT
830 PRINT "PRESS ANY KEY TO CONTINUE"
850 IF INKEY$="" THEN 850
860 CLS
870 RETURN
```

PRACPRB.BAS

```
 10  REM PRACTICE PRB
 20  CLS:KEY OFF
 30  LOCATE 10,5
 40  PRINT "     USING THE FORMULA FOR PART, RATE AND BASE FROM THE PREVIOUS SECTIONS;          SOLVE THE
     FOLLOWING BUSINESS MATH PROBLEMS."
 50  LOCATE 12,5
 60  PRINT "     YOU MAY CALCULATE THE ANSWER ON YOUR WORKING PAPER.  WRITE THE FORMULAS IF YOU NEED TO.
     DO NOT PUT ($ OR ,) IN YOUR ANSWER."
 70  LOCATE 23,5:INPUT"                                       PRESS ENTER TO CONTINUE"; v#:CLS
 80  LOCATE 10,10
 90  INPUT "THERE ARE 40 GIRLS IN A CLASS OF 200.  WHAT PERCENT ARE GIRLS";A$
100  LOCATE 13,10
110  PRINT "THE CORRECT ANSWER IS 20% "
120  LOCATE 14,10
130  PRINT "R = P/B   OR    40/200=.20"
140  LOCATE 23,5:INPUT"                                       PRESS ENTER TO CONTINUE"; V$:CLS
150  LOCATE 10,10
160  INPUT "WHAT IS THE RATE OF INTEREST THAT WILL EARN                          $250 ON AN INVESTMENT
     OF $2000";A$
170  LOCATE 13,10
180  PRINT "THE CORRECT ANSWER IS 12.5% "
190  LOCATE 14,10
200  PRINT "R = P/B   OR  250/2000=.125"
210  23,5:INPUT"                                  PRESS ENTER TO CONTINUE" ; R$: CLS
220  LOCATE 10,10
230  INPUT "HOW MUCH OF $600 IS 15%";A$
240  LOCATE 13,10
250  PRINT "THE CORRECT ANSWER IS 90"
260  LOCATE 14,10
270  PRINT "P=R*B  OR .15*600=90"
280  LOCATE 23,5:INPUT"                                       CONTINUE";V$:CLS
290  LOCATE 10,10
300  INPUT "WHAT IS THE AMOUNT OF DISCOUNT ON A $650 INVOICE AT A 30% RATE";A$
310  LOCATE 11,10
320  INPUT "WHAT IS THE AMOUNT DUE ON THIS INVOICE";G$
330  LOCATE 13,10
340  PRINT "THE CORRECT DISCOUNT IS $195"
350  LOCATE 14,10
360  PRINT "THE CORRECT AMOUNT DUE IS $455"
370  LOCATE 16,10
380  PRINT "DISCOUNT FORMULA  P=R*B  OR  .30*650=195"
390  LOCATE 17,10
400  PRINT "AMOUNT DUE IS:  AMOUNT OF INVOICE - DISCOUNT OR 650-195=455"
410  LOCATE 23,5:INPUT"                                       PRESS ENTER TO CONTINUE";V$:CLS
420  LOCATE 10,10
430  INPUT "IF YOU CAN SAVE $30 ON A BICYCLE AT A DISCOUNT OF 40%, WHAT IS THE            ORIGINAL PRICE
     OF THE BICYCLE";G$
440  LOCATE 13,10
450  PRINT "THE CORRECT ANSWER IS $75"
460  LOCATE 14,10
470  PRINT "B=P/R OR 30/.40=75" PRESS ENTER TO
480  LOCATE 23,5:INPUT"                                       PRESS ENTER TO CONTINUE";V$:CLS
490  LOCATE 10,10
500  INPUT "IF THE REAL ESTATE SALESMAN EARNED A COMMISSION OF $3000 AT A
     RATE OF 6%, WHAT WAS THE PRICE OF THE HOUSE THAT HE SOLD";H$ 10 LOCATE 13,10
520  PRINT "THE CORRECT ANSWER IS $50,000"
530  LOCATE 14,10
540  PRINT "B=P/R  OR  3000/.06=50000"
550  LOCATE 23,5:INPUT"                                       PRESS ENTER TO CONTINUE";V$:CLS
560  LOCATE 10,10
570  INPUT "THE COST OF GETTING A 6000 POUND SHIPMENT OF GOODS TRANSPORTED IS       $420.  WHAT IS THE RATE
     OF PER POUND CHARGED BY THE SHIPPING COMPANY" H$
580  LOCATE 13,10
590  PRINT "THE CORRECT ANSWER IS .07"
600  LOCATE 14,10
610  PRINT "R=P/B  OR  420/6000=.07"
620  LOCATE 23,5:INPUT"                                       PRESS ENTER TO CONTINUE";V$:CLS
630  LOCATE 10,10
```

```
640  INPUT "A SALESMAN EARNS A COMMISION AT THE RATE OF 8% ON SALES.
          IF HIS TOTAL SALES ARE 90,000 FOR THE MONTH, HOW MUCH DOES HE EARN";J$
650  LOCATE 13,10
660  PRINT "THE CORRECT ANSWER IS $7200"
670  LOCATE 14,10
680  PRINT "P=R*B  OR  .08*90000=7200"
690  LOCATE 23,5:INPUT"                              PRESS ENTER TO CONTINUE";V$:CLS
700  INPUT "WOULD YOU LIKE TO REPEAT THESE PROBLEMS";G$
710  IF G$="Y" OR G$="YES" THEN GOTO 10
720  CLS
730  PRINT "MAKE SURE DISK 1 IS IN DRIVE B TO CONTINUE"
740  PRINT
750  PRINT "PRESS ANY KEY TO CONTINUE"
760  IF INKEY$="" THEN 760
770  ON ERROR GOTO 790
780  CHAIN "B:INTEREST",ALL
790  CLS:PRINT"DISK 1 IS NOT IN DRIVE B. PLEASE PUT IT IN NOW."
800  PRINT
810  PRINT "PRESS ANY KEY TO CONTINUE"
820  IF INKEY$="" THEN 820
830  GOTO 770
```

INTEREST.BAS

```
 40  CLS
 50  PRINT "OBJECTIVE: TO SOLVE BUSINESS PROBLEMS INVOLVING INTEREST YOU WILL USE RULES OF   BASE-PART-RATE
     AND THE FOLLOWING EQUATIONS:  INTEREST(PART)=PRINCIPAL(WHOLE OR BASE)*RATE(%)*TIME    (I=P*R*T)"
 60  PRINT "WHEN MONEY IS BORROWED, THE AMOUNT PAID FOR ITS USE IS CALLED INTEREST"
 70  PRINT "THE AMOUNT BORROWED IS CALLED THE PRINCIPAL"
 80  PRINT "RATE IS THE PERCENT CHARGED--USUALLY EXPRESSED WITH A PERCENT SIGN (%) BUT      CHANGED TO A
     DEMIMAL TO SOLVE THE PROBLEM."
 90  PRINT "TIME IS THE PERIOD OF TIME BORROWED--USUALLY ON A YEAR BASIS. (360 DAYS OR 30 DAYS A MONTH)"
     100PRINT "WHEN THREE PARTS OF THE FORMULA WOULD BE KNOWN AND ONE PART UNKNOWN THE          FOLLOWING
     EQUATIONS ARE USED TO SOLVE INTEREST PROBLEMS."
105  GOSUB 3000
110  PRINT "I=P*R*T"
120  PRINT
130  PRINT "P= I/(R*T)"
140  PRINT
150  PRINT "R=I/(P*T)"
160  PRINT
170  PRINT "T=I/(P*R)
180  PRINT
230  PRINT "WHEN VALUE IS IN PARENTHESES THAT ARITHMETIC FUNCTION IS DONE FIRST"
235  GOSUB 3000
240  PRINT "EXAMPLE: IF YOU BORROW $600 AT 6% FOR ONE YEAR HOW MUCH INTEREST WOULD YOU PAY."
250  PRINT "SOLVE FOR INTEREST (UNKNOWN) I=P*R*T"
260  PRINT "I=PRINCIPAL(600)*RATE(.06)*TIME(1YEAR)"
270  PRINT "I=$600*.06*1
280  INPUT "AMOUNT OF INTEREST IS?";I
290  PRINT "CORRECT ANSWER=$36 --  DID YOU MOVE DECIMAL TWO PLACES TO LEFT WHEN YOU          MULTIPLIED
     *.06?"
295  GOSUB 3000
300  PRINT "EXAMPLE IF THE INTEREST FOR ONE YEAR AT 6% EQUALS $36, WHAT IS THE PRINCIPAL (UNKNOWN VALUE)?"
310  PRINT "P=I($36)/(RATE(.06)*TIME(1YR.))"
320  PRINT "P=$36/(.06*1)OR $36/.06"
330  INPUT "AMOUNT BORROWED IS ";P
340  PRINT "CORRECT ANSWER IS $600 --  DID YOU REMEMBER TO MOVE THE DECIMAL TWO PLACES TO    RIGHT IN
     DIVIDEND BEFORE DIVIDING BY THE DECIMAL AMOUNT."
350  GOSUB 3000
360  PRINT "EXAMPLE:IF THE INTEREST ON $600 FOR ONE YEAR IS $36 WHAT IS THE RATE?"
370  PRINT "APPLY THE FORMULA RATE=INTEREST($36)/(PRINCIPAL($600)*TIME(1YEAR))
380  PRINT "R=$36/(600*1)"
390  INPUT "WHAT IS THE RATE?";R
400  PRINT "THE CORRECT ANSWER IS -- .06 OR 6% -- DID YOU REMEMBER TO MOVE DECIMAL TWO    PLACES LEFT IN
     DIVIDEND AS YOU REMOVED THE TWO 0,S IN THE DIVISOR."
405  GOSUB 3000
410  PRINT
420  PRINT "EXAMPLE: IF WE WANT TO KNOW THE TIME AND WE HAVE BORROWED $600 AT 6% AND THE    INTEREST COST
     WAS $36 WE APPLY THE FOURTH FORMULA."
430  PRINT "T(TIME)=INTEREST ($36)/PRINCIPAL ($600) *RATE(.06)"
```

```
440  PRINT "T=$36/(600*.06)"
450  INPUT "WHAT IS THE TIME OF THE LOAN?";T
460  PRINT "CORRECT ANSWER IS 1 YEAR--T=$36/$36"
470  GOSUB 3000
480  PRINT "THE DENOMINATOR (BOTTOM NUMBER) OF A RATE FRACTION IS ALWAYS 100 REMEMBER IF   RATE
     WAS 12% (.12=12/100) TO CONVERT WHEN MAKE FRACTION FROM DECIMAL PUT A ONE   PLUS THE NUMBER OF ZEROS
     FOR EACH NUMBER IN DECIMAL."
[illegible]  PRINT
[illegible]  PRINT "WHEN WORKING INTEREST PROBLEMS INVOLVING DAYS IT WILL BE NECESSARY FOR TIME TO  BE STATED AS A
     FRACTION. [illegible]
[illegible]  PRINT "[illegible] FRACTION."
[illegible]  PRINT "EXAMPLE:40 DAYS IN 360 DAY YEAR =40/360"
[illegible]  PRINT
[illegible]  PRINT "EXAMPLE: 180 DAYS IN 360 DAY YEAR=180/360 OR 1/2"
[illegible]  PRINT "EXAMPLE: [illegible]"
520  PRINT "OCCASIONALLY A 365 DAY YEAR WILL BE USED AND IT WOULD BE USED AS THE DENOMINATOR OF THE
     FRACTION."
530  PRINT "WHAT WOULD BE THE INTEREST ON 1200 AT 10% FOR 90 DAYS ON A 365 DAY YEAR."
540  PRINT "I=1200     10     90"
550  PRINT "  ____ * ____ *____"
560  PRINT "   1       100   365"
570  PRINT
580  INPUT "THE INTEREST IS";A
583  PRINT
585  PRINT "THE CORRECT ANSWER IS -- 29.59 -- DID YOU REMEMBER TO APPLY THE FORMULA        CORRECTLY."
590  GOSUB 3000
600  PRINT "IF YOU BORROW $800 AT 13% FOR 1 YEAR WHAT IS THE INTEREST?"
610  PRINT "WHAT ARE THE KNOWN QUANTITIES?"
620  GOSUB 3000
630  PRINT "OK--PRINCIPAL $800, RATE 13%, TIME 1 YEAR"
640  PRINT "THINK! WHAT IS THE FORMULA TO BE USED?"
650  GOSUB 3000
660  PRINT "RIGHT--I=P*R*T(I=$800*.13*1)"
670  INPUT "WHAT IS THE ANSWER(NUMERIC VALUE)?";A
675  PRINT
680  PRINT "CORRECT ANSWER IS $104."
690  GOSUB 3000
720  PRINT "EXAMPLE:IF JOE JONES BORROWS $1000 FOR 90 DAYS(360 DAY YEAR) AT 12%, WHAT IS HIS INTEREST COST"
730  PRINT "THINK WHAT WILL BE THE FORMULA USED"
740  GOSUB 3000
750  INPUT "WHAT IS YOUR ANSWER";A
760  PRINT "I=P*R*T(90/360)OR I=1000*.12*(90/360)"
770  PRINT "CORRECT ANSWER IS $30"
775  GOSUB 3000
780  PRINT "WHEN WORKING WITH INTEREST AND TIME IS GIVEN IN MONTHS PUT THE NUMBER OF MONTHS OVER 12 AND
     MULTIPLY IN CORRECT FORMULA AS USUAL."
790  PRINT "EXAMPLE! IF SHARON JONES BORROWS $600 AT 10% FOR 8 MONTHS HOW MUCH INTEREST DOES SHE PAY FOR
     THE USE OF THE MONEY?"
800  PRINT " THINK!!  WHAT IS THE FORMULA?"
810  GOSUB 3000
840  PRINT "THE FORMULA WOULD BE I=P*R*T OR I=600*.10*(8/12)"
850  PRINT "THE CORRECT ANSWER IS $40"
860  GOSUB 3000
880  PRINT "NOW LET'S FIND THE PRINCIPAL -- IF SUE JONES BORROWS MONEY FOR 24 MONTHS TO BUY A CAR AND THE
     INTEREST CHARGED IS $400 AND THE RATE IS 12% WHAT IS THE AMOUNT SHE BORROWED?"
890  PRINT "THINK!!  WHAT IS THE FORMULA?"
900  INPUT "WHAT IS THE AMOUNT OF PRINCIPAL";A
910  PRINT
920  PRINT "THE CORRECT ANSWER IS $ 1666.67":PRINT "FORMULA USED IS P=I/(R*T)
930  GOSUB 3000
940  PRINT "IF JOHNSON COMPANY BORROWS AN AMOUNT FOR A YEAR AND THE BUSINESS PAYS $16,000 IN INTEREST AT
     THE RATE OF 16%, HOW MUCH DID THEY BORROW?"
950  PRINT "THINK!  WHAT IS THE FORMULA?"
960  INPUT "HOW MUCH DID THEY BORROW";A
965  PRINT
970  PRINT "THE CORRECT ANSWER IS $ 100,000.00"
975  PRINT "P=I/R*T OR P=16000/(.16*1)"
980  GOSUB 3000
990  PRINT "MAKE SURE DISK 1 IS IN DRIVE B TO CONTINUE"
1000 PRINT:PRINT "PRESS ANY KEY TO CONTINUE"
1010 IF INKEY$="" THEN 1010
1020 ON ERROR GOTO 1040
1030 CHAIN "B:COMPOUND",ALL
```

```
1040 CLS
1050 PRINT "DISK 1 IS NOT IN DRIVE B"
1060 PRINT"PLEASE PUT IT IN TO CONTINUE"
1070 GOSUB 3000
1080 GOTO 1020
3000 REM *** PAUSE ***
3010 PRINT
3020 PRINT "PRESS ANY KEY TO CONTINUE"
3030 IF INKEY$="" THEN 3030
[illegible]
[illegible] RETURN
```

[illegible].BAS

```
10 CLS
20 PRINT "COMPOUND INTEREST IS INTEREST EARNED THAT IS REINVESTED EACH YEAR, SEMIANNUALLY, OR QUARTERLY.
WHEN THE NEW AMOUNT OF INTEREST IS DETERMINED BY TAKING THE     PERCENT TIMES (PRINCIPAL+INTEREST FROM
PREVIOUS PERIOD)."
25 PRINT
30 PRINT "AN EXAMPLE OF COMPOUND INTEREST IS IF YOU INVESTED $600 AT 10% FOR 3 YEARS."
40 PRINT "TO DETERMINE THE TOTAL INTEREST EARNED FOR THE 3 YEARS MULTIPLY 600 * .10 AND   GET INTEREST
EARNED FOR THE FIRST YEAR WHICH WOULD BE $60."
50 PRINT "THE INTEREST FOR THE SECOND YEAR IS FOUND BY MULTIPLYING THE NEW INVESTMENT    AMOUNT
(600+60(INTEREST FOR FIRST YEAR)) TIMES 10% -- (660 * .10 = $66) INTEREST FOR THE SECOND YEAR."
60 PRINT "ADD THE $66 INTEREST TO THE $660 TO FIND THE AMOUNT INVESTED FOR THE THIRD YEAR -- 660 + 66 =
726"
70 PRINT "FOR THE INTEREST FOR THE THIRD YEAR, MULTIPLY $726 * 10% AND THIS WOULD BE 72.60."
80 PRINT "ADD THE $72.60 TO $726 TO GET THE TOTAL COMPOUND AMOUNT 726 + 72.60 = 798.60"
90 PRINT "SUBTRACT THE ORIGINAL AMOUNT BORROWED ($600) FROM THE ENDING AMOUNT ($ 798.60) TO DETERMINE THE
TOTAL AMOUNT OF INTEREST.  $798.60-$600= $198.60 AMOUNT OF       INTEREST EARNED IN 3 YEARS."
100 GOSUB 3000
110 PRINT "IN CONTRAST THE SAME $600 INVESTED AT 10% FOR 3 YEARS ON SIMPLE INTEREST WOULD EARN $180
(INTEREST=PRINCIPAL * RATE * TIME IN YEARS) OR INTEREST= (600 * .10) * 3.
120 PRINT
130 PRINT "FREQUENTLY COMPOUND INTEREST TABLES (WHICH HAVE THE AMOUNT CALCULATED ARE USED TO FIGURE
COMPOUND INTEREST."
140 PRINT "HOWEVER, IT IS HELPFUL FOR YOU TO KNOW HOW THEY ARE CALCULATED IN ORDER TO DETERMINE THE BEST
INVESTMENT PROCEDURE."
150 PRINT
160 INPUT "DO YOU WISH TO REVIEW THIS MATERIAL AGAIN?";A$
170 IF A$ ="Y" THEN 20
180 CLS
190 PRINT "OKAY LET'S SOLVE A FEW COMPOUND INTEREST PROBLEMS TO BE SURE YOU UNDERSTAND THE WAY THIS
WORKS."
200 PRINT
210 PRINT "IF YOU BORROWED $4000 AT 8 PERCENT FOR 2 YEARS AT COMPOUND INTEREST, WHAT IS THE TOTAL INTEREST
EARNED."
220 INPUT " WHAT IS THE INTEREST EARNED";A
230 PRINT "THE CORRECT ANSWER IS 665.60. GOOD JOB, BUT LET,S TRY SOME MORE"
240 GOSUB 3000
250 PRINT "IF THE AREN COMPANY BORROWED 10000 AT 10% FOR 2 YEARS WHAT IS THE TOTAL INTEREST PAID FOR THE 2
YEARS."
260 INPUT "TOTAL INTEREST PAID";A
270 PRINT "OK, KEEP UP THE GOOD WORK!" :PRINT "THE CORRECT ANSWER IS $2100 (DID YOU ADD THE AMOUNTS FOR
2 YEARS TOGETHER?)"
280 GOSUB 3000
290 PRINT "IF CENTRAL DAIRY BORROWED $2000 AT 5% FOR 3 YEARS COMPOUNDED, WHAT IS THE TOTAL INTEREST PAID?"
300 INPUT "TOTAL INTEREST PAID";A
310 PRINT "THE CORRECT TOTAL INTEREST IS $315.25"
320 GOSUB 3000
330 PRINT "MAKE SURE DISK 1 IS IN DRIVE B TO CONTINUE"
340 PRINT:PRINT "PRESS ANY KEY TO CONTINUE"
350 IF INKEY$="" THEN 350
360 ON ERROR GOTO 380
370 CHAIN "B:RATIO",ALL
380 CLS
390 PRINT "DISK 1 IS NOT IN DRIVE B"
400 PRINT" PLEASE PUT IT IN TO CONTINUE"
410 GOSUB 3000
420 GOTO 360
3000 REM *** PAUSE ***
```

```
3010 PRINT
3020 PRINT "PRESS ANY KEY TO CONTINUE" 030 IF INKEY$="" THEN 3030
3030 IF INKEYS$="" THEN 3030
3040 CLS
3050 RETURN
```

RATIO.BAS

```
   5  OR CLS
  10  PRINT "OBJECTIVE: DETERMINING VALUES BY RATIO AND PROPORTION "
  20  PRINT "A COMPARISON OF ONE ITEM TO ANOTHER IS DONE BY RATIO"
  30  PRINT "A RATIO MAY BE EXPRESSED AS 2 TO 3, 2:3, OR 2/3."
  40  PRINT "RATIOS ARE USUALLY EXPRESSED IN FRACTIONS AS THEIR LOWEST TERMS."
  50  PRINT "EXAMPLE:  IF IN YOUR COMPUTER CLASS THERE ARE 8 GIRLS AND 12 BOYS THE RATIO     WOULD BE
      EXPRESSED AS 8:12, 8/12, OR 8 TO 12 (REDUCED WOULD BE 2/3)"
  55  PRINT
  60  PRINT "LET'S REDUCE THE FOLLOWING RATIOS TO LOWEST TERMS."
  70  PRINT "24 TO 32 = 24/32 = 3/4 (DIVIDE BOTH BY 8)."
  75  PRINT
  80  PRINT "10 INCHES TO 18 INCHES = 10/18 = 5/9  (DIVIDE BOTH BY 2)."
  85  PRINT
  90  PRINT "1 HOUR TO 20 MINUTES = 60 MINUTES TO 20 MINUTES = 60/20 = 3/1 DIVIDE BOTH BY 20)."
  95  PRINT
 100  PRINT "1 FOOT TO 36 INCHES = 12 INCHES TO 36 INCHES = 12/36 = 1/3 (DIVIDE BOTH BY 12.)"
 105  GOSUB 3000
 110  PRINT "JUST KNOWING THE RATIO DOESN'T TELL US HOW MANY OF EACH THERE ARE.  IF WE KNOW THERE ARE 20 IN
      THE CLASS AND THE RATIO OF BOYS TO GIRLS IS 2 TO 3 THEN WE CAN DETERMINE HOW MANY BOYS AND HOW MANY
      GIRLS THERE ARE."
 120  PRINT "IF THE RATIO IS 2 TO 3 THEN WE ADD THE TWO NUMBERS TOGETHER AND GET A       DENOMINATOR OF 5.
      THEN PLACE THE 2 AND THE 3 OVER THE 5 FOR THE FRACTIONS 2/5 AND 3/5."
 130  PRINT "THEN MULTIPLY THE TOTAL NUMBER TIMES THE FRACTIONS.  20*2/5=8 BOYS 0*3/5 = 12 GIRLS"
 135  PRINT
 140  PRINT "IF THE RATIO IS 3 TO 7 AND THERE ARE 30 IN THE CLASS THEN (30*3/10)=9 BOYS AND (30*7/10)=21
      GIRLS (YOU GET THE DENOMINATOR BY ADDING THE 3 AND 7 TOGETHER)."
 145  PRINT
 150  PRINT "IF WE SAY IN A RATIO THAT 4/6 = 2/3 THEN THEY ARE EQUAL AND THUS CALLED A PROPORTION."
 155  GOSUB 3000
 160  PRINT "THE RULE OF PROPORTIONS IS TO MULTIPLY THE NUMERATOR OF ONE PROPORTIO TIMES THE DENOMINATOR OF
      THE OTHER AND GET A CROSS PRODUCT."
 170  PRINT "IN ANY PROPORTION THE CROSS PRODUCTS ARE EQUAL."
 180  PRINT "EXAMPLE:  4/6 = 8/12  (4*12=48) AND (6*8=48)."
 185  PRINT
 190  PRINT "ANOTHER WAY IS TO SAY THE PRODUCT OF THE MEANS (2 MIDDLE NUMBERS) = T E PRODUCT OF THE EXTREMES
      (2 OUTER NUMBERS)."
 200  PRINT "EXAMPLE:  3/5=6/10  (3*10=30) AND (5*6=30)."
 205  PRINT
 210  PRINT "WHEN THERE IS A MISSING NUMBER IN THE PROPORTION SOLVE BY EITHER METHOD."
 220  PRINT "EXAMPLE:  10 YARDS = 25 POUNDS HOW MUCH WOULD 15 YARDS WEIGH?"
 230  PRINT " 10 YARDS      15 YARDS                      375"
 240  PRINT "  --------     --------     CROSS        = ----- = 37.5 POUNDS"
 250  PRINT " 25 POUNDS     X POUNDS       MULTIPLY       10X"
 260  GOSUB 3000
 270  PRINT "MAKE SURE DISK 1 IS IN DRIVE B TO CONTINUE"
 280  PRINT:PRINT "PRESS ANY KEY TO CONTINUE"
 290  IF INKEY$="" THEN 290
 300  ON ERROR GOTO 320
 310  CHAIN "B:WAGES",ALL
 320  CLS
 330  PRINT "DISK 1 IS NOT IN DRIVE B"
 340  PRINT "PLEASE PUT IT IN TO CONTINUE"
 350  GOSUB 3000
 360  GOTO 300
3000  REM *** PAUSE ***
3010  PRINT
3020  PRINT "PRESS ANY KEY TO CONTINUE"
3030  IF INKEY$="" THEN 3030
3040  CLS
3050  RETURN
```

WAGES.BAS

```
 40  CLS
 50  PRINT "OBJECTIVE: TO CALCULATE EARNINGS, OVERTIME PAY, GROSS PAY, DEDUCTIONS, AND NET PAY ACCURATELY."
 55  PRINT
 60  PRINT "CALCULATIONS INVOLVED IN FIGURING WAGES ARE IMPORTANT TO YOU AS AN EMPLOYEE AND FOR JOB
     EMPLOYMENT AS A PAYROLL CLERK OR ADMINISTRATOR."
 70  PRINT "WAGES ARE FIGURED ON AN HOURLY BASIS IN MANY JOBS."
 80  PRINT "THE TIME CARDS OR TIME SHEETS SHOW THE AMOUNT OF TIME WORKED AND EARNINGS ARE  FIGURED FROM
     THERE."
 90  PRINT "EMPLOYEES WHO EARN A DESIGNATED WAGE PER HOUR WILL EARN A GROSS AMOUNT OF MONEY WHICH IS
     DETERMINED BY MULTIPLYING HOURS TIMES WAGE PER HOUR."
100  PRINT "ON HOURLY WAGES, BUSINESSES MAY ALSO PAY AN ADDITIONAL TIME AND A HALF RATE FOR HOURS OVER 40
     PER WEEK OR 8 HOURS PER DAY."
110  PRINT "GROSS PAY IS ALL PAY COMBINED AND TAXES ARE DETERMINED FROM THIS AMOUNT".
120  PRINT "SOCIAL SECURITY TAXES, INCOME TAXES, AND OTHER AMOUNTS TAKEN OUT OF WAGES ARE   CALLED
     DEDUCTIONS."
130  PRINT "GROSS PAY IS FIGURED BY MULTIPLYING HOURS WORKED TIMES WAGE PER HOUR (WHICH MAY VARY FROM ONE
     EMPLOYEE TO ANOTHER)."
135  GOSUB 3000
140  PRINT "EXAMPLE:  IF TONY WORKS 40 HOURS AT $3.00 PER HOUR, HIS GROSS PAY WOULD BE $120 (40*3)."
145  PRINT
150  PRINT "EXAMPLE:  IF MARY WORKED 45 HOURS AT $4.00 PER HOUR, HER GROSS PAY (NOT OVERTIME) WOULD BE
     $180."
155  GOSUB 3000
160  PRINT "EXAMPLE:  IF MARY WORKED 45 HOURS AT $4 PER HOUR (WITH OVERTIME) HER ROSS PAY WOULD BE $160
     REGULAR PLUS $30 FOR OVERTIME OR $190 TAKE HOME PAY."
170  PRINT "THIS WAS FIGURED BY:  40*$4=$160 + THE RATE OF (4*1 1/2 OR 1.5)=6$ PER HOUR FOR OVERTIME HOURS
     OVERTIME=(45-40)=5 HOURS.(5 HOURS * $6)=$30"
180  PRINT "REGULAR PAY($160)+OVERTIME($30)=$190 TOTAL GROSS PAY OR GROSS EARNINGS."
190  PRINT "FOR OVERTIME YOU CAN TAKE 1 1/2 * HOURS INSTEAD OF WAGE RATE IF THE CALCULATIONS ARE EASIER."
195  PRINT
200  PRINT "AFTER GROSS PAY IS DETERMINED, THE VARIOUS TAXES ARE CALCULATED EITHER BY MULTIPLYING A
     PERCENTAGE TIMES GROSS PAY OR BY USING SPECIALLY DESIGNED CHARTS."
210  PRINT "USING MARY'S GROSS PAY OF $190 AND FIGURING SOCIAL SECURITY (F.I.C.A. TAX OF   7.25% FOR
     EXAMPLE."
220  PRINT "THIS WOULD BE $190 * .0725 (MOVE DECIMAL TWO PLACES TO THE LEFT WHEN TAKING     PERCENT SIGN
     OFF).  THE TAX IS $14.78 "
230  PRINT "THIS TAX AND ANY OTHER TAXES ARE CALLED DEDUCTIONS AND ARE THUS SUBTRACTED FROM THE GROSS PAY
     TO ARRIVE AT MARY'S NET PAY (TAKE HOME PAY)"
240  PRINT "TO FINISH THE EXAMPLE (USING SOCIAL SECURITY TAX) 190-$14.78=$175.22 NET PAY"
250  INPUT "DO YOU WISH TO REVIEW THIS INFORMATION (Y/N)";Y$
260  IF Y$="Y" OR Y$= "YES" THEN CLS: GOTO 50
265  CLS
270  PRINT "YOU ARE NOW READY TO DO SEVERAL PRACTICE EXERCISES FIGURING GROSS PAY,            DEDUCTIONS,
     AND NET PAY."
275  PRINT
280  PRINT "MARY LARSEN WORKED 30 HOURS AT $6 PER HOUR. WHAT IS HER GROSS PAY"
290  INPUT A
300  PRINT "THE CORRECT ANSWER IS $180! HOPE YOU HAD IT CORRECT.(30*6)"
310  GOSUB 3000
320  PRINT "IF MARY HAD DEDUCTIONS OF 7% FOR SOCIAL SECURITY AND 20% FOR FEDERAL NCOME TAX. WHAT WOULD BE
     HER NET PAY (BOTH TAXES ARE FIGURED ON GROSS PAY)(REMEMBER: GROSS PAY WAS $180)"
330  INPUT "WHAT IS MARY'S NET PAY";A
340  PRINT:PRINT "MARY'S NET PAY IS $131.40"
350  PRINT "THAT WOULD BE (180*.07)=12.60 FOR SOCIAL SECURITY"
360  PRINT "               (180*.20)=36.00 FOR FEDERAL TAX"
370  PRINT "           12.60 + 36.00 = 48.60.  THEN GROSS PAY LESS DEDUCTIONS
     (180-48.60)=131.40"
380  GOSUB 3000
390  PRINT "IF MARK RAINES HAS WORKED AT $6 PER HOUR FOR 50 HOURS IN A WEEK AND 10 HOURS OF THIS WAS
     OVERTIME (AT TIME AND A HALF) WHAT WAS MARK'S GROSS PAY?"
400  INPUT A
410  PRINT "DID YOU GET THE CORRECT ANSWER OF $330"
420  PRINT "THAT WOULD BE 40 * 6 FOR REGULAR PAY, WHICH IS $240 PLUS (1.5 * 6)=9 OVERTIME      = RATE.
     THEN 9 * 10 = 90 OVERTIME PAY."
430  PRINT "TO GET TOTAL NET PAY ADD THE REGULAR PAY TO THE OVERTIME PAY (240 + 90 )=$330   TOTAL GROSS
     PAY."
440  GOSUB 3000
450  PRINT "USING MARK'S TOTAL GROSS PAY ($330) DETERMINE THE AMOUNT OF SOCIAL SECURITY AT,  7%, THE
     FEDERAL TAX AT 20% AND MARK'S NET PAY"
 455  PRINT
 460  INPUT "SOCIAL SECURTIY DEDUCTION";SS
 470  INPUT "FEDERAL TAX DEDUCTION";FT
 480  INPUT "TOTAL DEDUCTIONS";TD
 490  INPUT "MARKS NET PAY IS";NP
 500  PRINT
 510  PRINT "SOCIAL SECURITY DEDUCTION WAS (330 * .07)=$23.10"
 520  PRINT "FEDERAL INCOME TAX WAS (330 * .20)=$66.00"
 530  PRINT "TOTAL DEDUCTIONS (23.10 + 66.00)=$89.10"
 540  PRINT "MARK,S NET PAY (330 - 89.10)=$240.90"
 550  PRINT "DID YOU GET THE SAME RESULTS -- I HOPE SO"
 560  GOSUB 3000
 570  PRINT "JANE ADAMS WORKED 45 HOURS AT THE RATE OF $8 PER HOUR AND GETS TIME AND A HALF  FOR ALL WORK
      OVER 40 HOURS. WHAT IS JANE'S GROSS PAY"
 580  PRINT
 590  INPUT "JANE'S REGULAR PAY";RP
 600  INPUT "JANE'S OVERTIME PAY";O
 610  INPUT "JANE'S TOTAL GROSS PAY";GP
 620  PRINT
 630  PRINT "JANE'S REGULAR PAY IS  -- (40 * 8)=$320"
 640  PRINT "JANE'S OVERTIME PAY IS -- (8 * 1.5) * 5 HOURS = $60"
 650  PRINT "JANE'S TOTAL GROSS PAY IS -- (320 + 60)=$380"
 660  PRINT "HOPE YOUR WORK WAS CORRECT"
 670  GOSUB 3000
 680  INPUT "DO YOU WANT TO GO THROUGH THESE PAY PROBLEMS AGAIN";A$
 690  IF A$="Y" THEN GOTO 265
 700  GOSUB 3000
 710  PRINT "MAKE SURE DISK 1 IS IN DRIVE B TO CONTINUE"
 720  PRINT:PRINT "PRESS ANY KEY TO CONTINUE"
 730  IF INKEY$="" THEN 730
 740  ON ERROR GOTO 760
 750  CHAIN "B:BANKING",ALL
 760  CLS
 770  PRINT "DISK 1 IS NOT IN DRIVE B"
 780  PRINT"PLEASE PUT IT IN TO CONTINUE"
 790  GOSUB 3000
 800  GOTO 740
3000 REM *** PAUSE ***
3010 PRINT
3020 PRINT "PRESS ANY KEY TO CONTINUE"
3030 IF INKEY$="" THEN 3030
3040 CLS
3050 RETURN
```

BANKING.BAS

```
 30 CLS
 40 PRINT "BANKING PROBLEMS"
 50 PRINT "OBJECTIVE:  LEARN THE IMPORTANCE AND TERMINOLOGY OF CASH RECORDS.  LEARN TO KEEP A CHECKBOOK
    BALANCE, LEARN TO RECONCILE A BANK STATEMENT."
 55 PRINT
 60 PRINT "KEEPING CASH FLOW INFORMATION IS ESSENTIAL TO BUSINESS DECISION MAKING."
 70 PRINT "THE BALANCE OF THE CHECKING ACCOUNT AND HANDLING OF OTHER TYPES OF MONEY        CERTIFICATES
    IS IMPORTANT INFORMATION THAT MUST BE ACCURATE."
 80 PRINT "TO DETERMINE A CHECKING ACCOUNT BALANCE THE WORKER MUST STUB ALL CHECKS ACCURATELY, PROVIDING
    THE DATE, AMOUNT, PAYEE, AND PURPOSE OF THE CHECK."
 90 PRINT "IN THIS SECTION WE ARE GOING TO WORK WITH KEEPING A CHECKBOOK BALANCE.
100 PRINT "THE OFFICE WORKER MUST DETERMINE THE BEGINNING CHECKBOOK BALANCE."
110 PRINT "ALL CHECKS WRITTEN (WITHDRAW) ARE SUBTRACTED FROM THE BALANCE TO DETERMINE THE  NEW BALANCE."
120 PRINT "ALL DEPOSITS (AMOUNTS PUT INTO THE BANK) ARE ADDED TO THE PREVIOUS BALANCE TO    DETERMINE
    THE CURRENT BALANCE."
125 GOSUB 3000
130 PRINT "EXAMPLE:  IF YOUR BUSINESS STARTED OUT WITH AN INITIAL (BEGINNING) CASH DEPOSIT IN THE OF
    BANK OF $10,000."
140 PRINT "IF DURING THE DAY YOU WROTE CHECKS FOR $950, $250, AND $300, AND DEPOSITED $400; WHAT IS THE
    BALANCE AT THE END OF THE DAY?"
150 INPUT "WHAT IS THE BALANCE (DO NOT USE $ OR COMMA)";A
160 PRINT:PRINT "THE CORRECT ANSWER IS $8900"
165 GOSUB 3000
170 PRINT "EXAMPLE:  IF THE ACE CORPORATION HAD $25000 BEGINNING BALANCE AND MADE DEPOSITS OF $4000, AND
    $8500 DURING ANOTHER DAY OF BUSINESS."
 180 PRINT "THE BUSINESS ALSO WROTE CHECKS FOR $3500, $1200, $1600 AND $6500 DURING THE DAY."
 190 INPUT "WHAT IS THE NEW BALANCE";A
 200 PRINT:PRINT "THE CORRECT ANSWER IS $24700"
 205 GOSUB 3000
 210 CLS
 230 PRINT "OBJECTIVE:  LEARN TO MAKE AN ACCURATE RECONCILIATION."
 235 PRINT
 240 PRINT "WHEN A BUSINESS RECEIVES A BANK STATEMENT, A RECONCILIATION MUST BE MADE WITH   THE BANK
     BALANCE AND THE CHECKBOOK BALANCE."
 250 PRINT "TO PERFORM A RECONCILIATION THE BUSINESS MUST PUT THE CANCELED CHECKS (RETURNED WITH
     STATEMENT) INTO NUMERICAL ORDER."
 260 PRINT "NEXT IT MUST BE DETERMINED WHICH CHECKS THAT THE BUSINESS HAS WRITTEN ARE       OUTSTANDING
     (NOT PAID BY THE BANK)."
 270 PRINT "TO DO THIS, PUT THE CANCELLED CHECKS IN NUMERICAL ORDER AND COMPARE THE STUB     NUMBERS AND
     DETERMINE THE ONES THAT ARE NOT IN."
 280 PRINT "THEN THE BUSINESS DETERMINES IF THERE ARE ANY OUTSTANDING DEPOSITS (ONES MADE BY BUSINESS BUT
     NOT ON BANK STATEMENT.)"
 290 PRINT "LOOK AT BANK STATEMENT FOR OTHER CHARGES MADE."
 300 PRINT "OTHER CHARGES MIGHT BE FOR COLLECTING A CHECK, SERVICE CHARGE ON THE ACCOUNT,  NOTE
     COLLECTION, OR CHARGE FOR PRINTING CHECKS, ETC." )
 305 GOSUB 3000
 310 PRINT "AFTER ALL THIS INFORMATION IS GATHERED THE BUSINESS CAN PROCEED TO ACCURATELY   MAKE THE
     RECONCILIATION."
 315 PRINT
 330 PRINT "THE RECONCILIATION IS DONE BY SUBTRACTING ANY CHARGES FROM THE CHECKBOOK BALANCE TO ARRIVE AT
     AN ADJUSTED CHECK STUB BALANCE."
 350 PRINT "THE NEXT STEP IN THE RECONCILIATION IS TO USE THE LAST BALANCE ON THE BANK STATEMENT, ADD TO
     IT ANY OUTSTANDING DEPOSITS, DEDUCT THE TOTAL OF ALL OUTSTANDING     CHECKS, AND THE RESULT SHOULD
     BE THE ADJUSTED BANK BALANCE."
 360 PRINT "THE RECONCILIATION IS COMPLETE WHEN THE ADJUSTED CHECKBOOK BALANCE EQUALS THE ADJUSTED BANK
     BALANCE."
 370 INPUT "DO YOU WANT TO REPEAT THIS EXPLANATION";A$
 380 IF A$="YES" OR A$="Y" THEN CLS: GOTO 210
 385 CLS
 390 PRINT "TRY THESE PROBLEMS TO SEE IF YOU UNDERSTAND THE PRINCIPLE OF BANK RECONCILIATION."
 400 PRINT "BALANCE ON CHECKSTUB $3137, BALANCE ON BANK STATEMENT $3824, OUTSTANDING CHECKS NO.15-$35,
     NO.18-$865, SERVICE CHARGE FOR THE MONTH IS $3, OUTSTANDING DEPOSIT $210."
 410 INPUT "WHAT IS THE ADJUSTED BANK BALANCE AND ADJUSTED CHECKBOOK BALANCE.";A
 420 PRINT:PRINT "THE CORRECT ANSWER IS $3134"
 425 GOSUB 3000
 430 PRINT
 440 PRINT "BANK STATEMENT BALANCE FOR JOHN STONE IS $800.  OUTSTANDING CHECKS ARE NO.68-$30, NO.50-$70.
     CHECKBOOK BALANCE IS $707, SERVICE CHARGE IS $7."
 450 INPUT "WHAT IS THE ADJUSTED BANK BALANCE AND THE ADJUSTED CHECKBOOK BALANCE ;A
 460 PRINT:PRINT "THE CORRECT ANSWER IS $700"
 465 GOSUB 3000
 470 CLS
 490 PRINT "YOU DID WELL WITH BANK RECONCILIATION."
 500 GOSUB 3000
 510 PRINT "MAKE SURE DISK 1 IS IN DRIVE B TO CONTINUE"
 520 PRINT:PRINT "PRESS ANY KEY TO CONTINUE"
 530 IF INKEY$="" THEN 530
 540 ON ERROR GOTO 560
 550 CHAIN "B:REVPRB",ALL
 560 CLS
 570 PRINT "DISK 1 IS NOT IN DRIVE B"
 580 PRINT"PLEASE PUT IT IN TO CONTINUE"
 590 GOSUB 3000
 600 GOTO 540
3000 REM *** PAUSE ***,
3010 PRINT
3020 PRINT "PRESS ANY KEY TO CONTINUE"
3030 IF INKEY$="" THEN 3030
3040 CLS
3050 RETURN
10000 REM *** CORRECT ***
10010 PRINT
10020 PRINT "GOOD JOB "
10030 GOSUB 3000
10040 RETURN
```

REVPRB.BAS

```
  10  CLS
  20  PRINT "LET'S REVIEW THE FORMULAS FOR BASE, RATE AND PART."; A$
  30  INPUT "IF YOU KNOW THE BASE AND RATE WHAT IS THE FORMULA FOR FINDING THE PART
  40  B$= "P=B*R"
  50  IF A$=B$ THEN PRINT "GOOD JOB!" ELSE 60
  60  PRINT "THE CORRECT FORMULA SHOULD BE P=B*R"
  70  GOSUB 3000
  80  PRINT "LET'S WRITE ANOTHER FORMULA"
  90  INPUT "IF YOU KNOW THE RATE AND PART WHAT IS THE FORMULA TO DETERMINE THE BASE AMOUNT.";A$
 100  B$="B=P/R"
 110  IF A$=B$ THEN PRINT "NICE JOB!" ELSE 120
 120  PRINT "THE CORRECT FORMULA SHOULD BE B=P/R"
 130  GOSUB 3000
 140  PRINT "LET'S WRITE ANOTHER FORMULA"
 150  INPUT "IF YOU KNOW THE PART AND THE BASE WHAT IS THE FORMULA TO DETERMINE RATE ";A$
 160  B$="R=P/B"
 170  IF A$=B$ THEN PRINT "GOOD JOB!" ELSE 180
 180  PRINT "THE CORRECT FORMULA SHOULD BE R=P/B"
 190  GOSUB 3000
 200  INPUT "DO YOU WANT TO GO THROUGH THESE AGAIN (Y/N)";C$
 210  IF C$="Y" THEN CLS: GOTO 10
 220  GOSUB 3000
 230  PRINT "MAKE SURE DISK 1 IS IN DRIVE B TO CONTINUE"
 240  PRINT:PRINT "PRESS ANY KEY TO CONTINUE"
 250  IF INKEY$="" THEN 250
 260  ON ERROR GOTO 280
 270  CHAIN "B:CLOSE",ALL
 280  CLS
 290  PRINT "DISK 1 IS NOT IN DRIVE B"
 300  PRINT"PLEASE PUT IT IN TO CONTINUE"
 310  GOSUB 3000
 320  GOTO 260
3000  REM *** PAUSE ***
3010  PRINT
3020  PRINT "PRESS ANY KEY TO CONTINUE"
3030  IF INKEY$="" THEN 3030
3040  CLS
3050  RETURN
```

CLOSE.BAS

```
 10  CLS
 20  PRINT "THAT'S ALL OF THIS PROGRAM "
 30  PRINT "IF YOU WISH TO STUDY FURTHER, GO THROUGH THE PROGRAM AGAIN"
 40  PRINT "THANKS FOR TAKING TIME FOR THIS PROGRAM"
 40  PRINT
 50  END
```

COMPUTERIZED BUSINESS MATH SKILLS TUTORIAL AND PRACTICE

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Objectives:

- The student will review business math skills instruction and demonstrate improved ability to solve business math problems including division and multiplication of fractions; formulas for solving word problems (commissions, discounts, solving for unknown values); simple and compound interest; ratios; wages; banking; and review of word problems applying the formulas.

Procedures:

- Prepare the disk by key entering the following files in BASIC: MTFRACT; DDFRACT; PRB; PRACPRB; INTEREST; COMPOUND; RATIO; WAGES; BANKING; REVPRB; CLOSE. (The contents of these files are listed later.)
- Distribute the handout: **INSTRUCTIONS FOR USING THE BUSINESS MATH TUTORIAL AND PRACTICE DISK.**
- Have students complete the tutorial and practice disk following instructions as they appear on the screen.

Materials needed:

- Tutorial disk containing the BASIC files listed.
- Handouts: **INSTRUCTIONS FOR USING THE BUSINESS MATH TUTORIAL AND PRACTICE DISK**
- Paper and pencil for performing some calculations

Comments:

- The materials in this project are designed to be used on IBM, Tandy, or compatible computers. Units are designed to review principles and procedures for solving business math problems. Most of the units have practice problems for students to improve their problem solving abilities.

- Students use pencil and paper for some calculations. As they work the problems, students need to determine an answer before responding to the questions on the screen. The author does not allow the use of calculators for this work as one of the purposes is to enhance the student's logic and calculation skills. In addition, a calculator used too closely to the computer can occasionally create problems in the magnetic memory system of the computer.

- Students can be given a pretest on these math skills, use the computer tutorial and practice, and be given a posttest. Many students who are quite accomplished in higher math skills have difficulty with practical business math problems; however, as high school juniors and seniors, they are very reluctant to admit to having any difficulty. These computer programs and practice exercises were written to give students an opportunity to sharpen their practical business math skills.

- These computer exercises have been tested on approximately 200 eleventh and twelfth grade students who have shown an average 50 percent improvement rate in these business math skills.

- These programs require BASIC computer language capability and will work with a low-memory capacity. The author has also written these programs for Apple and Radio Shack TRS-80 computers.

- Editor's comment: Using the spacing as shown in the individual program statements will help reduce the wrapping of words between lines on the computer screen. Additional spaces may be added in some program statements to avoid splitting words.

INSTRUCTIONS FOR USING THE BUSINESS MATH TUTORIAL AND PRACTICE DISK

PROCEDURES: Turn your computer on; at the A> prompt, key BASIC OR BASICA and depress Enter. The screen will display "OK" and a blinking cursor. Insert the Math Disk in Drive B; key LOAD"B:MTFRACT"; depress Enter/Return. At the "OK" message key RUN. The program should now be loaded and running.

This business math unit is designed to work through from the beginning to the end and will move automatically from one file to another. However, if you get interrupted you can key LOAD"B:(Filename)" to start with any part of the business math program. The B: represents the name of the disk drive holding the tutorial disk. The filename will be one of the names from the list of files at the end of this handout. (Note: DO NOT TYPE THE PARENTHESES IN THE FILENAME.)

If you do not finish all the units at one time or if you want to repeat a unit, simply bring your computer up to A> and key BASIC or BASICA. At the "OK" message, key LOAD"B:(Filename)". When the OK message appears again, key RUN. You may now start at any section you choose. You may also return to any section and review the business math tutorial and practice at any time. As you work through the material, you will be asked to answer questions occasionally. Key your answer and depress Enter. Prior to depressing the Enter key, you can use the back arrow, then key the correct number over another number. DO NOT PUT COMMAS OR DOLLAR SIGNS IN YOUR ANSWERS.

After your have completed the tutorial and are ready to quit, either end that section or depress BREAK (CONTROL/BREAK on some computers) you will get the "OK" and flashing cursor. Key SYSTEM and depress ENTER/RETURN. Remove your disk and turn off your computer. Place your disk in its paper jacket and return the disk to its proper storage area.

The following is a list of the filenames in the order they will automatically load in the program. A brief explanation of each file is also given.

Filename	Explanation
MTFRACT	Practice multiplying fractions
DDFRACT	Practice dividing fractions
PRB	Formulas and explanations to solve word problems, problems involving commissions, discounts, unknown values, etc.
PRACPRB	Practice solving word problems using PRB formulas
INTEREST	Formulas and practice to determine simple interest
COMPOUND	Interest compounded, formulas, and explanation
RATIO	Explanations and calculations to use ratio to determine unknown amounts in related numbers
WAGES	Explanations and practice determining Gross Pay, Deductions, and Net Pay
BANKING	Problems, explanation, and practice determining checkbook balances and bank reconciliations
REVPRB	A review of the formulas for word problems using part, rate and base calculation

BASIC PROGRAMS

MTYFRACT.BAS

```
   1  CLS:KEY OFF:LOCATE 12,20:PRINT "MULTIPLYING FRACTIONS":LOCATE 15,1
   2  PRINT "THIS IS TO TEST YOUR KNOWLEDGE IN MULTIPLYING FRACTIONS"
   3  PRINT:PRINT "ENTER ANSWERS IN THE X/Y FORMAT."
   4  PRINT "REMEMBER: REDUCE WHENEVER POSSIBLE"
   5  PRINT:PRINT "THE X IS THE NUMERATOR"
   6  PRINT "THE Y IS THE DENOMINATOR"
   7  PRINT:PRINT "PRESS ANY KEY TO CONTINUE"
   8  IF INKEY$="" THEN 8
  10  REM MULTIPLING FRACTIONS
  20  CLS
  30  CLEAR 1000
  40  PS="##   ##"
  50  Q$="##   ##"
  60  DIM ONE(15), TWO(15), THREE(15), FOUR(15), ANSWERS(15)
  65  GOSUB 5000:REM FILL
  70  FOR Z= 0 TO 13
  75  IF ONE(Z)=1O THEN GOTO 1000
  79  X=0
  80  CLS:LOCATE 12,5
  90  PRINT USING PS;ONE(Z),TWO(Z)
  95  LOCATE 13,5
 100  PRINT "----  * ----"
 105  LOCATE 14,5
 110  PRINT USING Q$;THREE(Z),FOUR(Z)
 120  PRINT
 130  INPUT "WHAT IS THE ANSWER";IA$
 140  IF IA$<>ANSWERS$(Z) THEN X=X+1:PRINT "SORRY":S=S+1:GOTO 150
 145  IF IA$=ANSWERS$(Z)THEN PRINT "THAT IS CORRECT":C=C+1:GOTO 160
 150  IF X<>2 THEN GOTO 80 ELSE PRINT "THE CORRECT ANSWER IS ";ANSWERS$(Z):W=W+1
 160  INPUT "PRESS ENTER TO CONTINUE";Z$
 170  NEXT Z
1000  REM END
1010  CLS
1020  LOCATE 10,10
1030  PRINT "NUMBER TOTAL CORRECT IS ";C
1040  LOCATE 12,10
1050  PRINT "NUMBER CORRECT ON THE SECOND TRY IS ";S
1060  LOCATE 14,10
1070  PRINT "NUMBER WRONG IS ";W
1080  GOSUB 4000
1110  PRINT "MAKE SURE DISK 1 IS IN DRIVE B TO CONTINUE"
1120  PRINT:PRINT "PRESS ANY KEY TO CONTINUE"
1130  IF INKEY$="" THEN 1130
1140  ON ERROR GOTO 1160
1150  CHAIN "B:DDFRACT",ALL
1160  CLS
1170  PRINT "DISK 1 IS NOT IN DRIVE B"
1180  PRINT"PLEASE PUT IT IN TO CONTINUE"
1190  GOSUB 4000
1120  GOTO 1140
1999  END
2000  DATA 3,3,8,5,"9/40"
2010  DATA 5,7,16,8,"35/128
2020  DATA 15,3,16,4,"45/64"
2030  DATA 19,5,24,6,"95/144"
2040  DATA 7,6,8,7,"3/4"
2050  DATA 15,32,16,45,"2/3"
2060  DATA 5,7,9,12,"35/108"
2070  DATA 2,16,3,25,"32/75"
2080  DATA 9,7,10,8,"63/80"
2090  DATA 3,3,5,16,"9/80"
3000  DATA 5,9,9,10,"1/2"
3010  DATA 7,4,16,5,"7/20"
3020  DATA 4,2,5,3,"8/15"
```

```
3030  DATA 2,7,9,11,"14/99"
3040  DATA 100,100,100,100,"EOD"
4000  REM *** PAUSE ***
4010  PRINT
4020  PRINT "PRESS ANY KEY TO CONTINUE"
4030  IF INKEYS="  " THEN 4030
4040  CLS
4050  RETURN
5000  REM DIM AND FILL
5010  FOR Z = 0 TO 14
5020  IF ONE(Z)=100 THEN Z=Z-1:GOTO 5999
5030  READ ONE(Z),TWO(Z),THREE(Z),FOUR(Z),ANSWERS$(Z)
5040  NEXT Z
5999  RETURN
```

DDFRACT.BAS

```
  10  CLS:KEY OFF:LOCATE 12,20:PRINT "DIVIDING FRACTIONS":LOCATE 15,1
  20  PRINT "THIS IS TO TEST YOUR KNOWLEDGE IN DIVIDING FRACTIONS"
  30  PRINT:PRINT "ENTER ANSWERS IN THE X/Y FORMAT."
  40  PRINT "REMEMBER: REDUCE WHENEVER POSSIBLE"
  50  PRINT:PRINT "THE X IS THE NUMERATOR"
  60  PRINT "THE Y IS THE DENOMINATOR"
  70  PRINT:PRINT "PRESS ANY KEY TO CONTINUE"
  80  IF INKEY$="" THEN 80
  90  REM DIVIDING FRACTIONS
 100  CLS
 110  CLEAR 1000
 120  P$="##       /   ##"
 130  Q$="##    /     ##"
 140  DIM ONE(15),TWO(15),THREE(15),FOUR(15),ANSWERS$(15)
 150  GOSUB 2150:REM FILL
 160  FOR Z=0 TO 13
 170  IF ONE(Z)=10 THEN GOTO 320
 180  X=0
 190  CLS:LOCATE 12,5
 200  PRINT USING P$;ONE(Z),TWO(Z)
 210  LOCATE 13,5
 220  PRINT "----   /   ----"
 230  LOCATE 14,5
 240  PRINT USING Q$;THREE(Z),FOUR(Z)
 250  PRINT
 260  INPUT "WHAT IS THE ANSWER";IA$
 270  IF IA$<>ANSWERS$(Z) THEN X=X+1:PRINT "SORRY, THAT IS NOT CORRECT ":FOR D=1 TO 500:NEXT D:S=S+1
 280  IF IA$=ANSWERS$(Z)THEN PRINT "THAT IS CORRECT":C=C+1:X=O:GOTO 300
 290  IF X<>2 THEN GOTO 190 ELSE PRINT "THE CORRECT ANSWER IS ";ANSWERS$(Z):W=W+1
 300  INPUT "PRESS ENTER TO CONTINUE";Z$
 310  NEXT Z
 320  REM END
 330  CLS
 340  LOCATE 10,10
 350  PRINT "NUMBER TOTAL CORRECT IS ";C
 360  LOCATE 12,10
 370  PRINT "NUMBER CORRECT ON THE SECOND TRY IS ";S
 380  LOCATE 14,10
 390  PRINT "NUMBER WRONG IS ";W
 400  GOSUB 2210
 410  GOTO 6000
2000  DATA 3,3,8,5,"5/8"
2010  DATA 5,7,16,8,"5/14"
2020  DATA 15,3,16,4,"5/4"
2030  DATA 19,5,24,6,"19/20"
2040  DATA 7,6,8,7,"49/48"
2050  DATA 15,32,16,45,"875/512"
2060  DATA 5,7,9,12,"60/63"
2070  DATA 2,16,3,25,"25/24"
2080  DATA 9,7,10,8,"36/35"
2090  DATA 3,3,5,16,"16/5"
2100  DATA 5,9,9,10,"50/81"
2110  DATA 7,4,16,5,"35/64"
2120  DATA 4,2,5,3, "6/5"
```

```
2130  DATA 2,7,9,11,"22/63"
2140  DATA 100,100,100,100,"END"
2150  REM DIM AND FILL
2160  FOR Z = 0 TO 14
2170  IF ONE(Z)=100 THEN Z=Z-1:GOTO 2200
2180  READ ONE(Z),TWO(Z),THREE(A),FOUR(Z),ANSWERS(Z)
2190  NEXT Z
2200  RETURN
2210  REM *** PAUSE ***
2200  PRINT
2230  PRINT"PRESS ANY KEY TO CONTINUE"
2240  IF INKEY$="" THEN 2240
2250  CLS
2260  RETURN
6000  PRINT  "MAKE SURE DISK 1 IS IN DRIVE B TO CONTINUE"
6010  PRINT:PRINT "PRESS ANY KEY TO CONTINUE"
6020  IF INKEY$="" THEN 6020
6030  ON ERROR GOTO 6050
6040  CHAIN "B:PRB",ALL
6050  CLS
6060  PRINT "DISK 1 IS NOT IN DRIVE B"
6070  PRINT"PLEASE PUT IT IN TO CONTINUE"
6080  GOSUB 2210
6090  GOTO 6030
```

PRB.BAS

```
 10  CLS:PRINT "BUSINESS WORKERS PERFORM CALCULATIONS INVOLVING PERCENTS EVERYDAY!"
 20  PRINT "ONE BASIC EQUATION IS USED TO SOLVE PROBLEMS INVOLVING TAXES, COMMISSIONS, DISCOUNTS AND
     INTEREST."
 30  PRINT
 40  PRINT"STUDY AND LEARN THE FOLLOWING FORMULAS CAREFULLY AND THESE CALCULATION! WILL BE EASIER FOR YOU."
 50  PRINT"   THE ASTERISK (*) REPRESENTS MULTIPLICATION AND"
 60  PRINT"   THE DIAGONAL (/) REPRESENTS DIVISION ON THE COMPUTER."
 70  PRINT"   THE FORMULA IS:"
 80  PRINT"                 PERCENT(part)=RATE * BASE (P=R*B) "
 90  PRINT"THIS PERCENTAGE IS ALSO CALLED THE PART OF THE WHOLE AMOUNT.  USE THE TERMS PART, RATE AND BASE
     TO NAME THESE SEGMENTS OF YOUR PROBLEM IN THESE EXERCISES."
100  GOSUB 810
110  PRINT"RATE IS THE HUNDREDTHS OF BASE AND IS USUALLY STATED AS A PERCENT.  FOR EXAMPLE 25% OR .25
     DECIMAL FORM."
120  PRINT "RATE OR PERCENT IS THE QUOTIENT (result of division) OF PART DIVIDED BY BASE    (whole)."
130  PRINT "BASE IS THE WHOLE AMOUNT."
140  PRINT "BASE IS THE NUMBER OR QUANTITY OF WHICH THE RATE (percent) IS TAKEN."
150  [50 PRINT "BASE IS THE QUOTIENT (result of division) OF THE PART DIVIDED BY THE RATE.  AN EXAMPLE ---
     12 is 25% of 48--- THE 48 IS THE BASE, THE 12 IS THE PART AND THE 25% IS THE RATE."
160  PRINT "IN CALCULATIONS INVOLVING PERCENTAGES TWO OF THESE WOULD BE KNOWN, THE UNKNOWN PART YOU WILL
     ANSWER AS A 0."
170  PRINT
180  PRINT"THE FOLLOWING FORMULAS ARE USED TO SOLVE THESE PROBLEMS."
190  PRINT"           P=B*R (Part=Base * Rate)"
200  PRINT"           B=P/R (Base=Part / Rate)"
210  PRINT"           B=P/R (Base=Part / Rate)"
215  PRINT
220  PRINT"READ THE PROBLEM AND DETERMINE THE TWO KNOWN QUANTITIES AND THEN USE THEIR       VALUES IN THE
     PROPER PLACE.  PUT A 0 IN FOR THE UNKNOWN VALUE."
230  PRINT"AFTER YOU HAVE SUBSTITUTED THE KNOWN VALUES AND SOLVED THE PROBLEM YOU SHOULD THEN BE ABLE TO
     APPLY THE CORRECT FORMULAS AND FIND THE UNKNOWN QUANTITY
240  GOSUB 810
250  PRINT"EXAMPLE PROBLEM:  IF A CLASS HAS 40 PEOPLE IN IT AND 30% ARE FEMALE.  HOW MANY ARE FEMALE?"
260  PRINT"SUBSTITUTE THE KNOWN VALUES IN THE FORMULA.  P(part)=40(base)*.30(rate).        THE ANSWER WILL
     BE P (part) WHICH IS 12."
270  PRINT"USING THE SAME TYPE OF PROBLEM BUT KNOWING THAT THERE ARE 12 FEMALE STUDENTS REPRESENTING 30
     PERCENT OF THE TOTAL.  HOW MANY STUDENTS ARE THERE?"
280  PRINT"SUBSTITUTE THE KNOWN VALUES IN THE FORMULA BASE(whole)=12(part)/.30(rate).       THE ANSWER WILL
     BE B (base) WHICH IS 40."
290  PRINT
300  PRINT"ANOTHER EXAMPLE:  IF 8 STUDENTS IN A CLASS OF 24 ARE FEMALE, WHAT PERCENT ARE   FEMALE?"
310  PRINT"SUBSTITUTE THE KNOWN VALUES IN THE FORMULA RATE=8(part)/24(base).  THE ANSWER WILL BE R (rate)
     WHICH IS 33.3% or 33%."
320  GOSUB 810
```

```
330  CLS:REM---------------------------PROBLEMS----------------------------------
340  PRINT"A REAL ESTATE SALESMAN EARNS A COMMISSION OF 10% ON A HOME WHICH IS SOLD FOR     $60,000.  WHAT
     AMOUNT DOES HE EARN?"
350  GOSUB 670
360  PRINT"IF YOU USE A CREDIT CARD AND PAY A FINANCE CHARGE OF 16% ON A BALANCE F $750,  WHAT AMOUNT DO
     YOU PAY FOR THE CREDIT.  HINT THE WORD IS FOLLOWED BY THE BASE   (whole amount)."
370  GOSUB 670
380  PRINT"IF YOU OWN A BUSINESS PROPERTY VALUED AT $150,000 AND PAID $2,000 IN TAXES, WHAT RATE OF TAX DID
     YOU PAY?"
390  GOSUB 670
400  PRINT "16 IS WHAT PERCENT (rate) OF 96"
410  GOSUB 670
420  PRINT "40 IS WHAT PERCENT (rate) OF 30"
430  GOSUB 670
440  PRINT "THE AMOUNT OF A DISCOUNT ON A COMPUTER IS $240.  THE RATE IS 20%, WHAT IS THE   LIST PRICE
     (base) OF THE COMPUTER?"
450  GOSUB 670
460  PRINT "YOUR LOCAL BANK PAID YOU A TOTAL OF $800 INTEREST FOR ONE YEAR ON YOUR DEPOSIT AT THE RATE
     OF 6%.  HOW MUCH DID YOU HAVE DEPOSITED IN THE BANK?"
470  GOSUB 670
480  PRINT "TO CALCULATE PERCENT (rate) OF AN INCREASE OR DECREASE FOLLOW THE SAME FORMULAS."
490  PRINT "EXAMPLE:  IF THE KEYBOARDING SECTION IN THE WORD PROCESSING DIVISION WANTED TO  INCREASE THEIR
     PRODUCTIVITY BY 6% AND THEY ARE CURRENTLY PRODUCING 400 LINES.  HOW MANY ADDITIONAL LINES WILL THEY
     NEED TO PRODUCE?"
500  GOSUB 670
510  PRINT "DECREASE (part)=BEGINNING AMOUNT (base)-ENDING AMOUNT"
520  PRINT "TO FIND PERCENT(rate) OF DECREASE FIND THE AMOUNT OF DECREASE AND APPLY THE FORMULA
     Rate=Part/Base. <USE YOUR OWN VALUES>"
530  INPUT "BEGINNING AMOUNT";BA:INPUT "ENDING AMOUNT";E:P=BA-E:R=P/BA
540  PRINT:PRINT "DECREASE=";P:PRINT"RATE=";R
545  PRINT
550  INPUT " DO YOU WANT TO REPEAT THESE EXPLANATIONS OF FORMULAS AND EXAMPLE PROBLEMS";A$
560  IF A$="Y" THEN 10
570  CLS
580  PRINT "PLEASE MAKE SURE DISK 1 IS IN DRIVE B TO CONTINUE!!"
590  OSUB 810
600  ON ERROR GOTO 620
610  CHAIN "B:PRACPRB",ALL
620  CLS
630  PRINT "DISK 1 IS NOT IN DRIVE B "
640  PRINT "PLEASE PUT IT IN TO CONTINUE"
650  GOSUB 810
660  GOTO 600
670  REM *** PROBLEM CHECK ***
680  PRINT "ANSWER THE FOLLOWING, USE 0 FOR THE UNKNOWN NUMERIC ANSWER."
690  PRINT
700  INPUT "WHAT IS THE WHOLE AMOUNT?";B:INPUT "WHAT IS IT CALLED";B$
710  PRINT
720  INPUT "WHAT IS THE RATE";R:INPUT"WHAT IS IT CALLED";R$
730  PRINT
740  INPUT "WHAT IS THE PART";P:INPUT "WHAT IS IT CALLED";P$
750  PRINT
760  IF B=O THEN B=P/R ELSE IF R=O THEN R=P/B ELSE IF P=O THEN P=B*R
765  R=(R*1OO):R=INT(R)
770  PRINT B$" IS ";B:PRINT R$ " IS ";R "%"
771  PRINT P$" IS ";P
780  PRINT
790  GOSUB 810
800  RETURN
810  REM *** PAUSE ***
820  PRINT
830  PRINT "PRESS ANY KEY TO CONTINUE"
850  IF INKEY$="" THEN 850
860  CLS
870  RETURN
```

PRACPRB.BAS

```
 10  REM PRACTICE PRB
 20  CLS:KEY OFF
 30  LOCATE 10,5
 40  PRINT "     USING THE FORMULA FOR PART, RATE AND BASE FROM THE PREVIOUS SECTIONS;            SOLVE THE
     FOLLOWING BUSINESS MATH PROBLEMS."
 50  LOCATE 12,5
 60  PRINT "     YOU MAY CALCULATE THE ANSWER ON YOUR WORKING PAPER.  WRITE THE FORMULAS IF YOU NEED TO.
     DO NOT PUT ($ OR ,) IN YOUR ANSWER."
 70  LOCATE 23,5:INPUT"                                        PRESS ENTER TO CONTINUE"; v$:CLS
 80  LOCATE 10,10
 90  INPUT "THERE ARE 40 GIRLS IN A CLASS OF 200.  WHAT PERCENT ARE GIRLS";A$
100  LOCATE 13,10
110  PRINT "THE CORRECT ANSWER IS 20% "
120  LOCATE 14,10
130  PRINT "R = P/B   OR    40/200=.20"
140  LOCATE 23,5:INPUT"                                        PRESS ENTER TO CONTINUE"; V$:CLS
150  LOCATE 10,10
160  INPUT "WHAT IS THE RATE OF INTEREST THAT WILL EARN                           $250 ON AN INVESTMENT
     OF $2000";A$
170  LOCATE 13,10
180  PRINT "THE CORRECT ANSWER IS 12.5% "
190  LOCATE 14,10
200  PRINT "R = P/B   OR  250/2000=.125"
210  23,5:INPUT"                                   PRESS ENTER TO CONTINUE" ; R$: CLS
220  LOCATE 10,10
230  INPUT "HOW MUCH OF $600 IS 15%";A$
240  LOCATE 13,10
250  PRINT "THE CORRECT ANSWER IS 90"
260  LOCATE 14,10
270  PRINT "P=R*B  OR .15*600=90"
280  LOCATE 23,5:INPUT"                                        CONTINUE";V$:CLS
290  LOCATE 10,10
300  INPUT "WHAT IS THE AMOUNT OF DISCOUNT ON A $650 INVOICE AT A 30% RATE";A$
310  LOCATE 11,10
320  INPUT "WHAT IS THE AMOUNT DUE ON THIS INVOICE";G$
330  LOCATE 13,10
340  PRINT "THE CORRECT DISCOUNT IS $195"
350  LOCATE 14,10
360  PRINT "THE CORRECT AMOUNT DUE IS $455"
370  LOCATE 16,10
380  PRINT "DISCOUNT FORMULA  P=R*B  OR  .30*650=195"
390  LOCATE 17,10
400  PRINT "AMOUNT DUE IS:  AMOUNT OF INVOICE - DISCOUNT OR 650-195=455"
410  LOCATE 23,5:INPUT"                                        PRESS ENTER TO CONTINUE";V$:CLS
420  LOCATE 10,10
430  INPUT "IF YOU CAN SAVE $30 ON A BICYCLE AT A DISCOUNT OF 40%, WHAT IS THE             ORIGINAL PRICE
     OF THE BICYCLE";G$
440  LOCATE 13,10
450  PRINT "THE CORRECT ANSWER IS $75"
460  LOCATE 14,10
470  PRINT "B=P/R OR 30/.40=75" PRESS ENTER TO
480  LOCATE 23,5:INPUT"                                        PRESS ENTER TO CONTINUE";V$:CLS
490  LOCATE 10,10
500  INPUT "IF THE REAL ESTATE SALESMAN EARNED A COMMISSION OF $3000 AT A
     RATE OF 6%, WHAT WAS THE PRICE OF THE HOUSE THAT HE SOLD";H$ 10 LOCATE 13,10
520  PRINT "THE CORRECT ANSWER IS $50,000"
530  LOCATE 14,10
540  PRINT "B=P/R  OR  3000/.06=50000"
550  LOCATE 23,5:INPUT"                                        PRESS ENTER TO CONTINUE";V$:CLS
560  LOCATE 10,10
570  INPUT "THE COST OF GETTING A 6000 POUND SHIPMENT OF GOODS TRANSPORTED IS       $420.  WHAT IS THE RATE
     OF PER POUND CHARGED BY THE SHIPPING COMPANY" H$
580  LOCATE 13,10
590  PRINT "THE CORRECT ANSWER IS .07"
600  LOCATE 14,10
610  PRINT "R=P/B  OR  420/6000=.07"
620  LOCATE 23,5:INPUT"                                        PRESS ENTER TO CONTINUE";V$:CLS
630  LOCATE 10,10
```

```
640  INPUT "A SALESMAN EARNS A COMMISION AT THE RATE OF 8% ON SALES.
          IF HIS TOTAL SALES ARE 90,000 FOR THE MONTH, HOW MUCH DOES HE EARN";J$
650  LOCATE 13,10
660  PRINT "THE CORRECT ANSWER IS $7200"
670  LOCATE 14,10
680  PRINT "P=R*B  OR  .08*90000=7200"
690  LOCATE 23,5:INPUT"                                   PRESS ENTER TO CONTINUE";V$:CLS
700  INPUT "WOULD YOU LIKE TO REPEAT THESE PROBLEMS";G$
710  IF G$="Y" OR G$="YES" THEN GOTO 10
720  CLS
730  PRINT "MAKE SURE DISK 1 IS IN DRIVE B TO CONTINUE"
740  PRINT
750  PRINT "PRESS ANY KEY TO CONTINUE"
760  IF INKEY$="" THEN 760
770  ON ERROR GOTO 790
780  CHAIN "B:INTEREST",ALL
790  CLS:PRINT"DISK 1 IS NOT IN DRIVE B. PLEASE PUT IT IN NOW."
800  PRINT
810  PRINT "PRESS ANY KEY TO CONTINUE"
820  IF INKEY$="" THEN 820
830  GOTO 770
```

INTEREST.BAS

```
 40  CLS
 50  PRINT "OBJECTIVE: TO SOLVE BUSINESS PROBLEMS INVOLVING INTEREST YOU WILL USE RULES OF   BASE-PART-RATE
     AND THE FOLLOWING EQUATIONS:  INTEREST(PART)=PRINCIPAL(WHOLE OR BASE)*RATE(%)*TIME    (I=P*R*T)"
 60  PRINT "WHEN MONEY IS BORROWED, THE AMOUNT PAID FOR ITS USE IS CALLED INTEREST"
 70  PRINT "THE AMOUNT BORROWED IS CALLED THE PRINCIPAL"
 80  PRINT "RATE IS THE PERCENT CHARGED--USUALLY EXPRESSED WITH A PERCENT SIGN (%) BUT      CHANGED TO A
     DEMIMAL TO SOLVE THE PROBLEM."
 90  PRINT "TIME IS THE PERIOD OF TIME BORROWED--USUALLY ON A YEAR BASIS. (360 DAYS OR 30 DAYS A MONTH)"
     100PRINT "WHEN THREE PARTS OF THE FORMULA WOULD BE KNOWN AND ONE PART UNKNOWN THE          FOLLOWING
     EQUATIONS ARE USED TO SOLVE INTEREST PROBLEMS."
105  GOSUB 3000
110  PRINT "I=P*R*T"
120  PRINT
130  PRINT "P= I/(R*T)"
140  PRINT
150  PRINT "R=I/(P*T)"
160  PRINT
170  PRINT "T=I/(P*R)
180  PRINT
230  PRINT "WHEN VALUE IS IN PARENTHESES THAT ARITHMETIC FUNCTION IS DONE FIRST"
235  GOSUB 3000
240  PRINT "EXAMPLE: IF YOU BORROW $600 AT 6% FOR ONE YEAR HOW MUCH INTEREST WOULD YOU PAY."
250  PRINT "SOLVE FOR INTEREST (UNKNOWN) I=P*R*T"
260  PRINT "I=PRINCIPAL(600)*RATE(.06)*TIME(1YEAR)"
270  PRINT "I=$600*.06*1
280  INPUT "AMOUNT OF INTEREST IS?";I
290  PRINT "CORRECT ANSWER=$36 --  DID YOU MOVE DECIMAL TWO PLACES TO LEFT WHEN YOU          MULTIPLIED
     *.06?"
295  GOSUB 3000
300  PRINT "EXAMPLE IF THE INTEREST FOR ONE YEAR AT 6% EQUALS $36, WHAT IS THE PRINCIPAL (UNKNOWN VALUE)?"
310  PRINT "P=I($36)/(RATE(.06)*TIME(1YR.))"
320  PRINT "P=$36/(.06*1)OR $36/.06"
330  INPUT "AMOUNT BORROWED IS ";P
340  PRINT "CORRECT ANSWER IS $600 --  DID YOU REMEMBER TO MOVE THE DECIMAL TWO PLACES TO    RIGHT IN
     DIVIDEND BEFORE DIVIDING BY THE DECIMAL AMOUNT."
350  GOSUB 3000
360  PRINT "EXAMPLE:IF THE INTEREST ON $600 FOR ONE YEAR IS $36 WHAT IS THE RATE?"
370  PRINT "APPLY THE FORMULA RATE=INTEREST($36)/(PRINCIPAL($600)*TIME(1YEAR))
380  PRINT "R=$36/(600*1)"
390  INPUT "WHAT IS THE RATE?";R
400  PRINT "THE CORRECT ANSWER IS -- .06 OR 6% -- DID YOU REMEMBER TO MOVE DECIMAL TWO    PLACES LEFT IN
     DIVIDEND AS YOU REMOVED THE TWO 0,S IN THE DIVISOR."
405  GOSUB 3000
410  PRINT
420  PRINT "EXAMPLE: IF WE WANT TO KNOW THE TIME AND WE HAVE BORROWED $600 AT 6% AND THE    INTEREST COST
     WAS $36 WE APPLY THE FOURTH FORMULA."
430  PRINT "T(TIME)=INTEREST ($36)/PRINCIPAL ($600) *RATE(.06)"
```

```
440  PRINT "T=$36/(600*.06)"
450  INPUT "WHAT IS THE TIME OF THE LOAN?";T
460  PRINT "CORRECT ANSWER IS 1 YEAR--T=$36/$36"
470  GOSUB 3000
480  PRINT "THE DENOMINATOR (BOTTOM NUMBER) OF A RATE FRACTION IS ALWAYS 100 REMEMBER IF    RATE
     WAS 12%=.12=12/100  (REMEMBER: WHEN MAKE FRACTION FROM DECIMAL PUT A ONE    PLUS THE NUMBER OF ZEROS
     FOR EACH NUMBER IN DECIMAL."
485  PRINT
490  PRINT "WHEN WORKING INTEREST PROBLEMS INVOLVING DAYS IT WILL BE NECESSARY FOR TIME TO  BE STATED AS A
     FRACTION. THUS DAYS OVER 360 WILL BE THE FRACTION."
500  PRINT "EXAMPLE:40 DAYS IN 360 DAY YEAR =40/360"
505  PRINT
510  PRINT "EXAMPLE: 180 DAYS IN 360 DAY YEAR=180/360 OR 1/2"
520  PRINT "OCCASIONALLY A 365 DAY YEAR WILL BE USED AND IT WOULD BE USED AS THE DENOMINATOR OF THE
     FRACTION."
530  PRINT "WHAT WOULD BE THE INTEREST ON 1200 AT 10% FOR 90 DAYS ON A 365 DAY YEAR."
540  PRINT "I=1200     10    90"
550  PRINT "  ---- * ---- *----"
560  PRINT "   1      100   365"
570  PRINT
580  INPUT "THE INTEREST IS";A
583  PRINT
585  PRINT "THE CORRECT ANSWER IS -- 29.59 -- DID YOU REMEMBER TO APPLY THE FORMULA         CORRECTLY."
590   GOSUB 3000
600   PRINT "IF YOU BORROW $800 AT 13% FOR 1 YEAR WHAT IS THE INTEREST?"
610  PRINT "WHAT ARE THE KNOWN QUANTITIES?"
620  GOSUB 3000
630  PRINT "OK--PRINCIPAL $800, RATE 13%, TIME 1 YEAR"
640  PRINT "THINK! WHAT IS THE FORMULA TO BE USED?"
650  GOSUB 3000
660  PRINT "RIGHT--I=P*R*T(I=$800*.13*1)"
670  INPUT "WHAT IS THE ANSWER(NUMERIC VALUE)?";A
675  PRINT
680  PRINT "CORRECT ANSWER IS $104."
690  GOSUB 3000
720  PRINT "EXAMPLE:IF JOE JONES BORROWS $1000 FOR 90 DAYS(360 DAY YEAR) AT 12%, WHAT IS HIS INTEREST COST"
730  PRINT "THINK WHAT WILL BE THE FORMULA USED"
740  GOSUB 3000
750  INPUT "WHAT IS YOUR ANSWER";A
760  PRINT "I=P*R*T(90/360)OR I=1000*.12*(90/360)"
770  PRINT "CORRECT ANSWER IS $30"
775  GOSUB 3000
780  PRINT "WHEN WORKING WITH INTEREST AND TIME IS GIVEN IN MONTHS PUT THE NUMBER OF MONTHS OVER 12 AND
     MULTIPLY IN CORRECT FORMULA AS USUAL."
790  PRINT "EXAMPLE: IF SHARON JONES BORROWS $600 AT 10% FOR 8 MONTHS HOW MUCH INTEREST DOES SHE PAY FOR
     THE USE OF THE MONEY?"
800  PRINT " THINK!!  WHAT IS THE FORMULA?"
810  GOSUB 3000
840  PRINT "THE FORMULA WOULD BE I=P*R*T OR I=600*.10*(8/12)"
850  PRINT "THE CORRECT ANSWER IS $40"
860  GOSUB 3000
880  PRINT "NOW LET'S FIND THE PRINCIPAL -- IF SUE TOBAS BORROWS MONEY FOR 24 MONTHS TO BUY A CAR AND THE
     INTEREST CHARGED IS $400 AND THE RATE IS 12% WHAT IS THE AMOUNT SHE BORROWED?"
890  PRINT "THINK!!  WHAT IS THE FORMULA?"
900  INPUT "WHAT IS THE AMOUNT OF PRINCIPAL";A
910  PRINT
920  PRINT "THE CORRECT ANSWER IS $ 1666.67":PRINT "FORMULA USED IS P=I/(R*T)
930  GOSUB 3000
940  PRINT "IF JOHNSON COMPANY BORROWS AN AMOUNT FOR A YEAR AND THE BUSINESS PAYS $16,000 IN INTEREST AT
     THE RATE OF 16%, HOW MUCH DID THEY BORROW?"
950  PRINT "THINK!  WHAT IS THE FORMULA?"
960  INPUT "HOW MUCH DID THEY BORROW";A
965  PRINT
970  PRINT "THE CORRECT ANSWER IS $ 100,000.00"
975  PRINT "P=I/R*T OR P=16000/(.16*1)"
980  GOSUB 3000
990  PRINT "MAKE SURE DISK 1 IS IN DRIVE B TO CONTINUE"
1000 PRINT:PRINT "PRESS ANY KEY TO CONTINUE"
1010 IF INKEY$="" THEN 1010
1020 ON ERROR GOTO 1040
1030 CHAIN "B:COMPOUND",ALL
```

```
1040 CLS
1050 PRINT "DISK 1 IS NOT IN DRIVE B"
1060 PRINT"PLEASE PUT IT IN TO CONTINUE"
1070 GOSUB 3000
1080 GOTO 1020
3000 REM *** PAUSE ***
3010 PRINT
3320 PRINT "PRESS ANY KEY TO CONTINUE"
3030 IF INKEY$="" THEN 3030
3040 CLS
3050 RETURN
```

COMPOUND.BAS

```
  10  CLS
  20  PRINT "COMPOUND INTEREST IS INTEREST EARNED THAT IS REINVESTED EACH YEAR, SEMIANNUALLY, OR QUARTERLY.
      THEN THE NEW AMOUNT OF INTEREST IS DETERMINED BY TAKING THE     PERCENT TIMES (PRINCIPAL+INTEREST FROM
      PREVIOUS PERIOD)."
  25  PRINT
  30  PRINT "AN EXAMPLE OF COMPOUND INTEREST IS IF YOU INVESTED $600 AT 10% FOR 3 YEARS."
  40  PRINT "TO DETERMINE THE TOTAL INTEREST EARNED FOR THE 3 YEARS MULTIPLY 600 * .10 AND   GET INTEREST
      EARNED FOR THE FIRST YEAR WHICH WOULD BE $60."
  50  PRINT "THE INTEREST FOR THE SECOND YEAR IS FOUND BY MULTIPLYING THE NEW INVESTMENT    AMOUNT
      (600+60(INTEREST FOR FIRST YEAR)) TIMES 10% -- (660 * .10 = $66) INTEREST FOR THE SECOND YEAR."
  60  PRINT "ADD THE $66 INTEREST TO THE $660 TO FIND THE AMOUNT INVESTED FOR THE THIRD YEAR -- 660 + 66 =
      726"
  70  PRINT "FOR THE INTEREST FOR THE THIRD YEAR, MULTIPLY $726 * 10% AND THIS WOULD BE 72.60."
  80  PRINT "ADD THE $72.60 TO $726 TO GET THE TOTAL COMPOUND AMOUNT 726 + 72.60 = 798.60"
  90  PRINT "SUBTRACT THE ORIGINAL AMOUNT BORROWED ($600) FROM THE ENDING AMOUNT ($ 798.60) TO DETERMINE THE
      TOTAL AMOUNT OF INTEREST.  $798.60-$600= $198.60 AMOUNT OF       INTEREST EARNED IN 3 YEARS."
 100  GOSUB 3000
 110  PRINT "IN CONTRAST THE SAME $600 INVESTED AT 10% FOR 3 YEARS ON SIMPLE INTEREST WOULD EARN $180
      (INTEREST=PRINCIPAL * RATE * TIME IN YEARS) OR INTEREST= (600 * .10) * 3.
 120  PRINT
 130  PRINT "FREQUENTLY COMPOUND INTEREST TABLES (WHICH HAVE THE AMOUNT CALCULATED ARE USED TO FIGURE
      COMPOUND INTEREST."
 140  PRINT "HOWEVER, IT IS HELPFUL FOR YOU TO KNOW HOW THEY ARE CALCULATED IN ORDER TO DETERMINE THE BEST
      INVESTMENT PROCEDURE."
 150  PRINT
 160  INPUT "DO YOU WISH TO REVIEW THIS MATERIAL AGAIN?";A$
 170  IF A$ ="Y" THEN 20
 180  CLS
 190  PRINT "OKAY LET'S SOLVE A FEW COMPOUND INTEREST PROBLEMS TO BE SURE YOU UNDERSTAND THE WAY THIS
      WORKS."
 200  PRINT
 210  PRINT "IF YOU BORROWED $4000 AT 8 PERCENT FOR 2 YEARS AT COMPOUND INTEREST, WHAT IS THE TOTAL INTEREST
      EARNED."
 220  INPUT " WHAT IS THE INTEREST EARNED";A
 230  PRINT "THE CORRECT ANSWER IS 665.60. GOOD JOB, BUT LET,S TRY SOME MORE"
 240  GOSUB 3000
 250  PRINT "IF THE AREN COMPANY BORROWED 10000 AT 10% FOR 2 YEARS WHAT IS THE TOTAL INTEREST PAID FOR THE 2
      YEARS."
 260  INPUT "TOTAL INTEREST PAID";A
 270  PRINT "OK, KEEP UP THE GOOD WORK!" :PRINT "THE CORRECT ANSWER IS $2100 (DID YOU ADD THE AMOUNTS FOR
      BOTH YEARS TOGETHER?)"
 280  GOSUB 3000
 290  PRINT "IF CENTRAL DAIRY BCRROWED $2000 AT 5% FOR 3 YEARS COMPOUNDED, WHAT IS THE TOTAL INTEREST PAID?"
 300  INPUT "TOTAL INTEREST PAID";A
 310  PRINT "THE CORRECT TOTAL INTEREST IS $315.25"
 320  GOSUB 3000
 330  PRINT "MAKE SURE DISK 1 IS IN DRIVE B TO CONTINUE"
 340  PRINT:PRINT "PRESS ANY KEY TO CONTINUE"
 350  IF INKEY$="" THEN 350
 360  ON ERROR GOTO 380
 370  CHAIN "B:RATIO",ALL
 380  CLS
 390  PRINT "DISK 1 IS NOT IN DRIVE B"
 400  PRINT" PLEASE PUT IT IN TO CONTINUE"
 410  GOSUB 3000
 420  GOTO 360
3000  REM *** PAUSE ***
```

400

```
3010 PRINT
3020 PRINT "PRESS ANY KEY TO CONTINUE" 030 IF INKEY$="" THEN 3030
3030 IF INKEYS$="" THEN 3030
3040 CLS
3050 RETURN
```

RATIO.BAS

```
  5  OR CLS
 10  PRINT "OBJECTIVE: DETERMINING VALUES BY RATIO AND PROPORTION "
 20  PRINT "A COMPARISON OF ONE ITEM TO ANOTHER IS DONE BY RATIO"
 30  PRINT "A RATIO MAY BE EXPRESSED AS 2 TO 3, 2:3, OR 2/3."
 40  PRINT "RATIOS ARE USUALLY EXPRESSED IN FRACTIONS AS THEIR LOWEST TERMS."
 50  PRINT "EXAMPLE:  IF IN YOUR COMPUTER CLASS THERE ARE 8 GIRLS AND 12 BOYS THE RATIO     WOULD BE
     EXPRESSED AS 8:12, 8/12, OR 8 TO 12 (REDUCED WOULD BE 2/3)"
 55  PRINT
 60  PRINT "LET'S REDUCE THE FOLLOWING RATIOS TO LOWEST TERMS."
 70  PRINT "24 TO 32 = 24/32 = 3/4 (DIVIDE BOTH BY 8)."
 75  PRINT
 80  PRINT "10 INCHES TO 18 INCHES = 10/18 = 5/9  (DIVIDE BOTH BY 2)."
 85  PRINT
 90  PRINT "1 HOUR TO 20 MINUTES = 60 MINUTES TO 20 MINUTES = 60/20 = 3/1 DIVIDE BOTH BY 20)."
 95  PRINT
100  PRINT "1 FOOT TO 36 INCHES = 12 INCHES TO 36 INCHES = 12/36 = 1/3 (DIVIDE BOTH BY 12.)"
105  GOSUB 3000
110  PRINT "JUST KNOWING THE RATIO DOESN'T TELL US HOW MANY OF EACH THERE ARE.  IF WE KNOW THERE ARE 20 IN
     THE CLASS AND THE RATIO OF BOYS TO GIRLS IS 2 TO 3 THEN WE CAN DETERMINE HOW MANY BOYS AND HOW MANY
     GIRLS THERE ARE."
120  PRINT "IF THE RATIO IS 2 TO 3 THEN WE ADD THE TWO NUMBERS TOGETHER AND GET A       DENOMINATOR OF 5.
     THEN PLACE THE 2 AND THE 3 OVER THE 5 FOR THE FRACTIONS 2/5 AND 3/5."
130  PRINT "THEN MULTIPLY THE TOTAL NUMBER TIMES THE FRACTIONS.  20*2/5=8 BOYS 0*3/5 = 12 GIRLS"
135  PRINT
140  PRINT "IF THE RATIO IS 3 TO 7 AND THERE ARE 30 IN THE CLASS THEN (30*3/10)=9 BOYS AND (30*7/10)=21
     GIRLS (YOU GET THE DENOMINATOR BY ADDING THE 3 AND 7 TOGETHER)."
145  PRINT
150  PRINT "IF WE SAY IN A RATIO THAT 4/6 = 2/3 THEN THEY ARE EQUAL AND THUS CALLED A PROPORTION."
155  GOSUB 3000
160  PRINT "THE RULE OF PROPORTIONS IS TO MULTIPLY THE NUMERATOR OF ONE PROPORTIO TIMES THE DENOMINATOR OF
     THE OTHER AND GET A CROSS PRODUCT."
170  PRINT "IN ANY PROPORTION THE CROSS PRODUCTS ARE EQUAL."
180  PRINT "EXAMPLE:  4/6 = 8/12  (4*12=48) AND (6*8=48)."
185  PRINT
190  PRINT "ANOTHER WAY IS TO SAY THE PRODUCT OF THE MEANS (2 MIDDLE NUMBERS) = T E PRODUCT OF THE EXTREMES
     (2 OUTER NUMBERS)."
200  PRINT "EXAMPLE:  3/5=6/10  (3*10=30) AND (5*6=30)."
205  PRINT
210  PRINT "WHEN THERE IS A MISSING NUMBER IN THE PROPORTION SOLVE BY EITHER METHOD."
220  PRINT "EXAMPLE:  10 YARDS = 25 POUNDS HOW MUCH WOULD 15 YARDS WEIGH?"
230  PRINT " 10 YARDS      15 YARDS                   375"
240  PRINT "  --------     --------     CROSS        = ----- = 37.5 POUNDS"
250  PRINT " 25 POUNDS     X POUNDS       MULTIPLY      10X"
260  GOSUB 3000
270  PRINT "MAKE SURE DISK 1 IS IN DRIVE B TO CONTINUE"
280  PRINT:PRINT "PRESS ANY KEY TO CONTINUE"
290  IF INKEY$="" THEN 290
300  ON ERROR GOTO 320
310  CHAIN "B:WAGES",ALL
320  CLS
330  PRINT "DISK 1 IS NOT IN DRIVE B"
340  PRINT "PLEASE PUT IT IN TO CONTINUE"
350  GOSUB 3000
360  GOTO 300
3000 REM *** PAUSE ***
3010 PRINT
3020 PRINT "PRESS ANY KEY TO CONTINUE"
3030 IF INKEY$="" THEN 3030
3040 CLS
3050 RETURN
```

WAGES.BAS

```
 40 CLS
 50 PRINT "OBJECTIVE: TO CALCULATE EARNINGS, OVERTIME PAY, GROSS PAY, DEDUCTIONS, AND NET PAY ACCURATELY."
 55 PRINT
 60 PRINT "CALCULATIONS INVOLVED IN FIGURING WAGES ARE IMPORTANT TO YOU AS AN EMPLOYEE AND FOR JOB
    EMPLOYMENT AS A PAYROLL CLERK OR ADMINISTRATOR."
 70 PRINT "WAGES ARE FIGURED ON AN HOURLY BASIS IN MANY JOBS."
 80 PRINT "THE TIME CARDS OR TIME SHEETS SHOW THE AMOUNT OF TIME WORKED AND EARNINGS ARE  FIGURED FROM
    THERE."
 90 PRINT "EMPLOYEES WHO EARN A DESIGNATED WAGE PER HOUR WILL EARN A GROSS AMOUNT OF MONEY WHICH IS
    DETERMINED BY MULTIPLYING HOURS TIMES WAGE PER HOUR."
100 PRINT "ON HOURLY WAGES, BUSINESSES MAY ALSO PAY AN ADDITIONAL TIME AND A HALF RATE FOR HOURS OVER 40
    PER WEEK OR 8 HOURS PER DAY."
110 PRINT "GROSS PAY IS ALL PAY COMBINED AND TAXES ARE DETERMINED FROM THIS AMOUNT".
120 PRINT "SOCIAL SECURITY TAXES, INCOME TAXES, AND OTHER AMOUNTS TAKEN OUT OF WAGES ARE   CALLED
    DEDUCTIONS."
130 PRINT "GROSS PAY IS FIGURED BY MULTIPLYING HOURS WORKED TIMES WAGE PER HOUR (WHICH MAY VARY FROM ONE
    EMPLOYEE TO ANOTHER)."
135 GOSUB 3000
140 PRINT "EXAMPLE:  IF TONY WORKS 40 HOURS AT $3.00 PER HOUR, HIS GROSS PAY WOU D BE $120 (40*3)."
145 PRINT
150 PRINT "EXAMPLE:  IF MARY WORKED 45 HOURS AT $4.00 PER HOUR, HER GROSS PAY (NOT OVERTIME) WOULD BE
    $180."
155 GOSUB 3000
160 PRINT "EXAMPLE:  IF MARY WORKED 45 HOURS AT $4 PER HOUR (WITH OVERTIME) HER ROSS PAY WOULD BE $160
    REGULAR PLUS $30 FOR OVERTIME OR $190 TAKE HOME PAY."
170 PRINT "THIS WAS FIGURED BY:  40*$4=$160 + THE RATE OF (4*1 1/2 OR 1.5)=6$ PER HOUR FOR OVERTIME HOURS
    OVERTIME=(45-40)=5 HOURS.(5 HOURS * $6)=$30"
180 PRINT "REGULAR PAY($160)+OVERTIME($30)=$190 TOTAL GROSS PAY OR GROSS EARNINGS."
190 PRINT "FOR OVERTIME YOU CAN TAKE 1 1/2 * HOURS INSTEAD OF WAGE RATE IF THE CALCULATIONS ARE EASIER."
195 PRINT
200 PRINT "AFTER GROSS PAY IS DETERMINED, THE VARIOUS TAXES ARE CALCULATED EITHER BY MULTIPLYING A
    PERCENTAGE TIMES GROSS PAY OR BY USING SPECIALLY DESIGNED CHARTS."
210 PRINT "USING MARY'S GROSS PAY OF $190 AND FIGURING SOCIAL SECURITY (F.I.C.A. TAX OF   7.25% FOR
    EXAMPLE."
220 PRINT "THIS WOULD BE $190 * .0725 (MOVE DECIMAL TWO PLACES TO THE LEFT WHEN TAKING     PERCENT SIGN
    OFF).  THE TAX IS $14.78 "
230 PRINT "THIS TAX AND ANY OTHER TAXES ARE CALLED DEDUCTIONS AND ARE THUS SUBTRACTED FROM THE GROSS PAY
    TO ARRIVE AT MARY'S NET PAY (TAKE HOME PAY)"
240 PRINT "TO FINISH THE EXAMPLE (USING SOCIAL SECURITY TAX) 190-$14.78=$175.22 NET PAY"
250 INPUT "DO YOU WISH TO REVIEW THIS INFORMATION (Y/N)";Y$
260 IF Y$="Y" OR Y$= "YES" THEN CLS: GOTO 50
265 CLS
270 PRINT "YOU ARE NOW READY TO DO SEVERAL PRACTICE EXERCISES FIGURING GROSS PAY,           DEDUCTIONS,
    AND NET PAY."
275 PRINT
280 PRINT "MARY LARSEN WORKED 30 HOURS AT $6 PER HOUR. WHAT IS HER GROSS PAY"
290 INPUT A
300 PRINT "THE CORRECT ANSWER IS $180! HOPE YOU HAD IT CORRECT.(30*6)"
310 GOSUB 3000
320 PRINT "IF MARY HAD DEDUCTIONS OF 7% FOR SOCIAL SECURITY AND 20% FOR FEDERAL NCOME TAX. WHAT WOULD BE
    HER NET PAY (BOTH TAXES ARE FIGURED ON GROSS PAY)(REMEMBER: GROSS PAY WAS $180)"
330 INPUT "WHAT IS MARY'S NET PAY";A
340 PRINT:PRINT "MARY'S NET PAY IS $131.40"
350 PRINT "THAT WOULD BE (180*.07)=12.60 FOR SOCIAL SECURITY"
360 PRINT "              (180*.20)=36.00 FOR FEDERAL TAX"
370 PRINT "           12.60 + 36.00 = 48.60.  THEN GROSS PAY LESS DEDUCTIONS
    (180-48.60)=131.40"
380 GOSUB 3000
390 PRINT "IF MARK RAINES HAS WORKED AT $6 PER HOUR FOR 50 HOURS IN A WEEK AND 10 HOURS OF THIS WAS
    OVERTIME (AT TIME AND A HALF) WHAT WAS MARK'S GROSS PAY?"
400 INPUT A
410 PRINT "DID YOU GET THE CORRECT ANSWER OF $330"
420 PRINT "THAT WOULD BE 40 * 6 FOR REGULAR PAY, WHICH IS $240 PLUS (1.5 * 6)=9 OVERTIME      = RATE.
    THEN 9 * 10 = 90 OVERTIME PAY."
430 PRINT "TO GET TOTAL NET PAY ADD THE REGULAR PAY TO THE OVERTIME PAY (240 + 90 )=$330   TOTAL GROSS
    PAY."
440 GOSUB 3000
450 PRINT "USING MARK'S TOTAL GROSS PAY ($330) DETERMINE THE AMOUNT OF SOCIAL SECURITY AT,  7%, THE
    FEDERAL TAX AT 20% AND MARK'S NET PAY"
```

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455  PRINT
460  INPUT "SOCIAL SECURTIY DEDUCTION";SS
470  INPUT "FEDERAL TAX DEDUCTION";FT
480  INPUT "TOTAL DEDUCTIONS";TD
490  INPUT "MARKS NET PAY IS";NP
500  PRINT
510  PRINT "SOCIAL SECURITY DEDUCTION WAS (330 * .07)=$23.10"
520  PRINT "FEDERAL INCOME TAX WAS (330 * .20)=$66.00"
530  PRINT "TOTAL DEDUCTIONS (23.10 + 66.00)=$89.10"
540  PRINT "MARK,S NET PAY (330 - 89.10)=$240.90"
550  PRINT "DID YOU GET THE SAME RESULTS -- I HOPE SO"
560  GOSUB 3000
570  PRINT "JANE ADAMS WORKED 45 HOURS AT THE RATE OF $8 PER HOUR AND GETS TIME AND A HALF  FOR ALL WORK
     OVER 40 HOURS. WHAT IS JANE'S GROSS PAY"
580  PRINT
590  INPUT "JANE'S REGULAR PAY";RP
600  INPUT "JANE'S OVERTIME PAY";O
610  INPUT "JANE'S TOTAL GROSS PAY";GP
620  PRINT
630  PRINT "JANE'S REGULAR PAY IS  -- (40 * 8)=$320"
640  PRINT "JANE'S OVERTIME PAY IS -- (8 * 1.5) * 5 HOURS = $60"
650  PRINT "JANE'S TOTAL GROSS PAY IS -- (320 + 60)=$380"
660  PRINT "HOPE YOUR WORK WAS CORRECT"
670  GOSUB 3000
680  INPUT "DO YOU WANT TO GO THROUGH THESE PAY PROBLEMS AGAIN";A$
690  IF A$="Y" THEN GOTO 265
700  GOSUB 3000
710  PRINT "MAKE SURE DISK 1 IS IN DRIVE B TO CONTINUE"
720  PRINT:PRINT "PRESS ANY KEY TO CONTINUE"
730  IF INKEY$="" THEN 730
740  ON ERROR GOTO 760
750  CHAIN "B:BANKING",ALL
760  CLS
770  PRINT "DISK 1 IS NOT IN DRIVE B"
780  PRINT"PLEASE PUT IT IN TO CONTINUE"
790  GOSUB 3000
800  GOTO 740
3000 REM *** PAUSE ***
3010 PRINT
3020 PRINT "PRESS ANY KEY TO CONTINUE"
3030 IF INKEY$="" THEN 3030
3040 CLS
3050 RETURN
```

BANKING.BAS

```
 30 CLS
 40 PRINT "BANKING PROBLEMS"
 50 PRINT "OBJECTIVE:  LEARN THE IMPORTANCE AND TERMINOLOGY OF CASH RECORDS.  LEARN TO KEEP A CHECKBOOK
    BALANCE, LEARN TO RECONCILE A BANK STATEMENT."
 55 PRINT
 60 PRINT "KEEPING CASH FLOW INFORMATION IS ESSENTIAL TO BUSINESS DECISION MAKING."
 70 PRINT "THE BALANCE OF THE CHECKING ACCOUNT AND HANDLING OF OTHER TYPES OF MONEY        CERTIFICATES
    IS IMPORTANT INFORMATION THAT MUST BE ACCURATE."
 80 PRINT "TO DETERMINE A CHECKING ACCOUNT BALANCE THE WORKER MUST STUB ALL CHECKS ACCURATELY, PROVIDING
    THE DATE, AMOUNT, PAYEE, AND PURPOSE OF THE CHECK."
 90 PRINT "IN THIS SECTION WE ARE GOING TO WORK WITH KEEPING A CHECKBOOK BALANCE.
100 PRINT "THE OFFICE WORKER MUST DETERMINE THE BEGINNING CHECKBOOK BALANCE."
110 PRINT "ALL CHECKS WRITTEN (WITHDRAW) ARE SUBTRACTED FROM THE BALANCE TO DETERMINE THE  NEW BALANCE."
120 PRINT "ALL DEPOSITS (AMOUNTS PUT INTO THE BANK) ARE ADDED TO THE PREVIOUS BALANCE TO    DETERMINE
    THE CURRENT BALANCE."
125 GOSUB 3000
130 PRINT "EXAMPLE:  IF YOUR BUSINESS STARTED OUT WITH AN INITIAL (BEGINNING) CASH DEPOSIT IN THE OF
    BANK OF $10,000."
140 PRINT "IF DURING THE DAY YOU WROTE CHECKS FOR $950, $250, AND $300, AND DEPOSITED $400; WHAT IS THE
    BALANCE AT THE END OF THE DAY?"
150 INPUT "WHAT IS THE BALANCE (DO NOT USE $ OR COMMA)";A
160 PRINT:PRINT "THE CORRECT ANSWER IS $8900"
165 GOSUB 3000
170 PRINT "EXAMPLE:  IF THE ACE CORPORATION HAD $25000 BEGINNING BALANCE AND MADE DEPOSITS OF $4000, AND
    $8500 DURING ANOTHER DAY OF BUSINESS."
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  180 PRINT "THE BUSINESS ALSO WROTE CHECKS FOR $3500, $1200, $1600 AND $6500 DURING THE DAY."
  190 INPUT "WHAT IS THE NEW BALANCE";A
  200 PRINT:PRINT "THE CORRECT ANSWER IS $24700"
  205 GOSUB 3000
  210 CLS
  230 PRINT "OBJECTIVE:  LEARN TO MAKE AN ACCURATE RECONCILIATION."
  235 PRINT
  240 PRINT "WHEN A BUSINESS RECEIVES A BANK STATEMENT, A RECONCILIATION MUST BE MADE WITH   THE BANK
      BALANCE AND THE CHECKBOOK BALANCE."
  250 PRINT "TO PERFORM A RECONCILIATION THE BUSINESS MUST PUT THE CANCELED CHECKS (RETURNED WITH
      STATEMENT) INTO NUMERICAL ORDER."
  260 PRINT "NEXT IT MUST BE DETERMINED WHICH CHECKS THAT THE BUSINESS HAS WRITTEN ARE       OUTSTANDING
      (NOT PAID BY THE BANK)."
  270 PRINT "TO DO THIS, PUT THE CANCELLED CHECKS IN NUMERICAL ORDER AND COMPARE THE STUB     NUMBERS AND
      DETERMINE THE ONES THAT ARE NOT IN."
  280 PRINT "THEN THE BUSINESS DETERMINES IF THERE ARE ANY OUTSTANDING DEPOSITS (ONES MADE BY BUSINESS BUT
      NOT ON BANK STATEMENT.)"
  290 PRINT "LOOK AT BANK STATEMENT FOR OTHER CHARGES MADE."
  300 PRINT "OTHER CHARGES MIGHT BE FOR COLLECTING A CHECK, SERVICE CHARGE ON THE ACCOUNT,  NOTE
      COLLECTION, OR CHARGE FOR PRINTING CHECKS, ETC." )
  305 GOSUB 3000
  310 PRINT "AFTER ALL THIS INFORMATION IS GATHERED THE BUSINESS CAN PROCEED TO ACCURATELY   MAKE THE
      RECONCILIATION."
  315 PRINT
  330 PRINT "THE RECONCILIATION IS DONE BY SUBTRACTING ANY CHARGES FROM THE CHECKBOOK BALANCE TO ARRIVE AT
      AN ADJUSTED CHECK STUB BALANCE."
  350 PRINT "THE NEXT STEP IN THE RECONCILIATION IS TO USE THE LAST BALANCE ON THE BANK STATEMENT, ADC TO
      IT ANY OUTSTANDING DEPOSITS, DEDUCT THE TOTAL OF ALL OUTSTANDING     CHECKS, AND THE RESULT SHOULD
      BE THE ADJUSTED BANK BALANCE."
  360 PRINT "THE RECONCILIATION IS COMPLETE WHEN THE ADJUSTED CHECKBOOK BALANCE EQUALS THE ADJUSTED BANK
      BALANCE."
  370 INPUT "DO YOU WANT TO REPEAT THIS EXPLANATION";A$
  380 IF A$="YES" OR A$="Y" THEN CLS: GOTO 210
  385 CLS
  390 PRINT "TRY THESE PROBLEMS TO SEE IF YOU UNDERSTAND THE PRINCIPLE OF BANK RECONCILIATION."
  400 PRINT "BALANCE ON CHECKSTUB $3137, BALANCE ON BANK STATEMENT $3824, OUTSTANDING CHECKS NO.15-$35,
      NO.18-$865, SERVICE CHARGE FOR THE MONTH IS $3, OUTSTANDING DEPOSIT $210."
  410 INPUT "WHAT IS THE ADJUSTED BANK BALANCE AND ADJUSTED CHECKBOOK BALANCE.";A
  420 PRINT:PRINT "THE CORRECT ANSWER IS $3134"
  425 GOSUB 3000
  430 PRINT
  440 PRINT "BANK STATEMENT BALANCE FOR JOHN STONE IS $800.  OUTSTANDING CHECKS ARE NO.68-$30, NO.50-$70.
      CHECKBOOK BALANCE IS $707, SERVICE CHARGE IS $7."
  450 INPUT "WHAT IS THE ADJUSTED BANK BALANCE AND THE ADJUSTED CHECKBOOK BALANCE ;A
  460 PRINT:PRINT "THE CORRECT ANSWER IS $700"
  465 GOSUB 3000
  470 CLS
  490 PRINT "YOU DID WELL WITH BANK RECONCILIATION."
  500 GOSUB 3000
  510 PRINT "MAKE SURE DISK 1 IS IN DRIVE B TO CONTINUE"
  520 PRINT:PRINT "PRESS ANY KEY TO CONTINUE"
  530 IF INKEY$="" THEN 530
  540 ON ERROR GOTO 560
  550 CHAIN "B:REVPRB",ALL
  560 CLS
  570 PRINT "DISK 1 IS NOT IN DRIVE B"
  580 PRINT"PLEASE PUT IT IN TO CONTINUE"
  590 GOSUB 3000
  600 GOTO 540
 3000 REM *** PAUSE ***,
 3010 PRINT
 3020 PRINT "PRESS ANY KEY TO CONTINUE"
 3030 IF INKEY$="" THEN 3030
 3040 CLS
 3050 RETURN
10000 REM *** CORRECT ***
10010 PRINT
10020 PRINT "GOOD JOB "
10030 GOSUB 3000
10040 RETURN
```

REVPRB.BAS

```
  10  CLS
  20  PRINT "LET'S REVIEW THE FORMULAS FOR BASE, RATE AND PART."; A$
  30  INPUT "IF YOU KNOW THE BASE AND RATE WHAT IS THE FORMULA FOR FINDING THE PART
  40  B$= "P=B*R"
  50  IF A$=B$ THEN PRINT "GOOD JOB!" ELSE 60
  60  PRINT "THE CORRECT FORMULA SHOULD BE P=B*R"
  70  GOSUB 3000
  80  PRINT "LET'S WRITE ANOTHER FORMULA"
  90  INPUT "IF YOU KNOW THE RATE AND PART WHAT IS THE FORMULA TO DETERMINE THE BASE AMOUNT.";A$
 100  B$="B=P/R"
 110  IF A$=B$ THEN PRINT "NICE JOB!" ELSE 120
 120  PRINT "THE CORRECT FORMULA SHOULD BE B=P/R"
 130  GOSUB 3000
 140  PRINT "LET'S WRITE ANOTHER FORMULA"
 150  INPUT "IF YOU KNOW THE PART AND THE BASE WHAT IS THE FORMULA TO DETERMINE RATE ";A$
 160  B$="R=P/B"
 170  IF A$=B$ THEN PRINT "GOOD JOB!" ELSE 180
 180  PRINT "THE CORRECT FORMULA SHOULD BE R=P/B"
 190  GOSUB 3000
 200  INPUT "DO YOU WANT TO GO THROUGH THESE AGAIN (Y/N)";C$
 210  IF C$="Y" THEN CLS: GOTO 10
 220  GOSUB 3000
 230  PRINT "MAKE SURE DISK 1 IS IN DRIVE B TO CONTINUE"
 240  PRINT:PRINT "PRESS ANY KEY TO CONTINUE"
 250  IF INKEY$="" THEN 250
 260  ON ERROR GOTO 280
 270  CHAIN "B:CLOSE",ALL
 280  CLS
 290  PRINT "DISK 1 IS NOT IN DRIVE B"
 300  PRINT"PLEASE PUT IT IN TO CONTINUE"
 310  GOSUB 3000
 320  GOTO 260
3000  REM *** PAUSE ***
3010  PRINT
3020  PRINT "PRESS ANY KEY TO CONTINUE"
3030  IF INKEY$="" THEN 3030
3040  CLS
3050  RETURN
```

CLOSE.BAS

```
10  CLS
20  PRINT "THAT'S ALL OF THIS PROGRAM "
30  PRINT "IF YOU WISH TO STUDY FURTHER, GO THROUGH THE PROGRAM AGAIN"
40  PRINT "THANKS FOR TAKING TIME FOR THIS PROGRAM"
40  PRINT
50  END
```

WORKING WITH INFLATION

CONTRIBUTOR:
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Objectives:

- The student will be able to compute inflation-oriented problems both by hand and by using the computer.

Procedures:

- Discuss basic principles and terminology of inflation.
- Give each student the handout **COMPUTER PRICE INDEX INFORMATION**. Have students solve problem number 1 using a calculator.
- After solving the problem using a calculator, have students solve the problem using the spreadsheet software.
- Discuss the difference between performing the inflation calculation by hand and by using the computer.
- Solve remainder of the inflation problems using spreadsheet software. (Note: The complexity of these problems renders them nearly impossible for most students to calculate by hand, however most students can solve them in a matter of seconds using the software.)
- Remind students not to enter the "$" or "," in monetary figures. Students should use appropriate spreadsheet features to display monetary figures.

Materials needed:

- Calculator
- Spreadsheet software, such as INFLATOR or Lotus 1-2-3.
- Current listing of Consumer Price Index since 1960.

Comments:

- This exercise was designed to use with the INFLATOR software, a shareware package available for a single-copy registration fee of $25 from Software Design Concepts, 855 11th Street, Charleston, IL 61920 (site licenses are also available). A free demo copy (non-registered) can be obtained by sending $5 to cover the cost of the disk and mailing. The demo copy can be freely copied but only includes inflation data through 1987. Alternatively, the instructor can set up a Lotus (or other spreadsheet) template which utilizes the Consumer Price Index and allows students to input data to calculate inflation.

Solutions:

1. Method: Calculate what $5,421 (1966 dollars) would be in 1987 after adjusting for inflation. To find the real increase, divide the salary he was receiving in 1987 by the adjusted total.

   Solution: In 1966 dollars $5,421 would be $18,747.70 in 1987 dollars. Divided into the actual 1987 salary of $39,610, Bill received raises (after adjusting for inflation of 111.27%) over the 21 years he worked for J&R Enterprises.

2. Method: The method here is the same as for #1. Calculate $1.50 (1960 dollars) in 1985 dollars. Then divide the 1985 haircut price by that amount.

   Solution: $1.50 (1960 dollars) = $5.38 (1985 dollars)

$$\frac{\$6.00 \text{ (1985 haircut price)}}{5.38 \text{ (1960 haircut price in 1985 dollars)}} = 1.115 \text{ (11.5\% actual increase)}$$

3. Method: Taking one 1960 dollar, add the percentage increase for each year to 1990.

   Solution: $4.39

4. Method: The method for this problem is the same as #2.

   Solution: .15 (1965 dollars) = .62 (1990 dollars)
   1.25 / .62 = 2.016, or a 101.6% increase in real price.

5. Method: For each year, 100% + inflation rate must be divided into the amount for that year to get the previous year's value. Continue to do that until reaching a 1980 figure. The process is repeated for the wage for each year.

   Solution:

Year	Current Wage	1980 Equivalent
1980	3.14	3.14
1981	3.25	2.95
1982	4.10	3.51
1983	4.75	3.95
1984	5.15	4.14
1985	5.50	4.27
1986	6.05	4.64
1987	7.00	5.15
1988	7.35	5.18
1989	7.90	5.32
1990	8.50	5.39

CONSUMER PRICE INDEX
INFORMATION (1960-1990)

Note: The percentages shown represent the inflation over the previous year.

Year	% Inflation	Year	% Inflation	Year	% Inflation
1960	1.6	1971	4.3	1982	6.0
1961	1.0	1972	3.3	1983	3.0
1962	1.1	1973	6.2	1984	3.4
1963	1.2	1974	11.0	1985	3.6
1964	1.3	1975	9.1	1986	1.1
1965	1.7	1976	5.8	1987	4.4
1966	2.9	1977	6.5	1988	4.4
1967	2.9	1978	7.6	1989	4.6
1968	4.2	1979	11.5	1990	6.1
1969	5.4	1980	13.4		
1970	5.9	1981	10.2		

SAMPLE INFLATION PROBLEMS

1. Bill went to work for J&R Enterprises in 1966. He retired in 1987 after 21 years with the company. When he started work in 1966, his salary was $5,421 per year. When he retired, his salary was $39,610. What was his overall increase in salary during the time he worked for J&R? What was his increase after adjusting for inflation?

2. Sam's dad complained that a haircut which only cost $1.50 in 1960 cost him $6.00 in 1985. He claimed that the quadrupled cost was far too much and that it far exceeded inflation during the period. Was he right? What was the real percentage increase after adjusting for inflation?

3. How much would it take in 1990 to purchase the same goods and services that $1 bought in 1960?

4. The Sunday newspaper was priced at 15 cents in 1965. Today the same paper is priced at $1.25. After adjusting for inflation, what was the actual percentage increase in the price of the paper?

5. John started working for Jim's Appliance Co. in 1980. He received a raise each year thereafter. The list below shows his hourly wage for each year. Calculate his wage each year in 1980 constant dollars.

Year	Wage (Current Dollars)	Year	Wage (Current Dollars)
1980	3.14	1986	6.05
1981	3.25	1987	7.00
1982	4.10	1988	7.35
1983	4.75	1989	7.90
1984	5.15	1990	8.50
1985	5.50		

USING SPREADSHEETS TO SIMULATE SALES RECEIPTS CALCULATIONS

CONTRIBUTORS:
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Objectives:

- The student will calculate sales receipts and perform computations using a spreadsheet program.

Procedures:

- Prepare slips of paper containing specific store items with prices. (At least five per student.) Note: Students could be instructed to bring information on five items.

- Explain the purpose of a spreadsheet and how the calculating functions are similar to that of a cash register. Have each student choose five of the folded slips of paper with the items and prices printed on them.

- Have students prepare their individual spreadsheets by creating a fictitious name and address for their place of business. Have students key the sales slip headings and the items and prices from the slips of paper.

- Have students create formulas that will automatically subtotal the items, add 6% sales tax, total the items and amount of change. Save and print a copy of the spreadsheet.

Materials needed:

- Slips of paper with items and prices

- Any spreadsheet software

Comments:

- The instructor may want to demonstrate to the students how sales tax affects total cost of items by changing the sales tax percentage.

- If the class has already discussed circle graphs, the instructor can augment the lesson by having students create a circle graph showing the proportion of money spent on each item. If you do not have a software program to prepare circle graphs, use protractors and crayons.

Terminology:

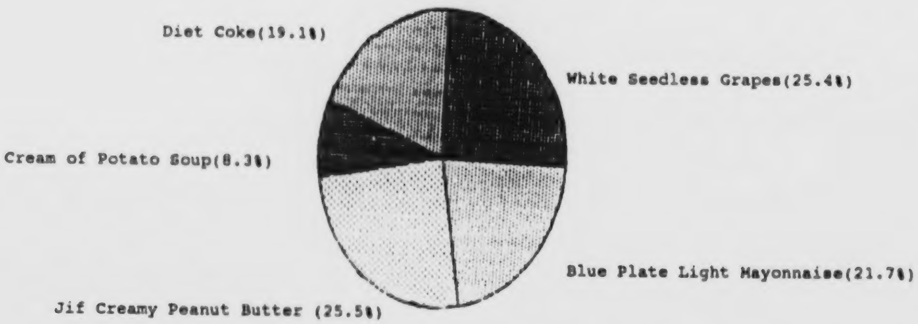
- To complete this exercise, student must know the following terms and symbols: average, percentage, divide (\), multiply (*), average (@), add (+), and subtract (-), cell, and cell address.

Solution:

Sandy North Store
7447 Roswell Road
Atlanta, GA 30328

Item	Units	Price per Unit	Total Cost
White Seedless Grapes	2 lbs	$0.99	$1.98
Diet Coke	2 liter	$1.49	$1.49
Cream of Potato Soup	10.75 ozs.	$0.65	$0.65
Jif Creamy Peanut Butter	18 ozs.	$1.99	$1.99
Blue Plate Light Mayonnaise	quart	$1.69	$1.69
Subtotal			$7.80
6% Sales Tax			$0.47
Total			$8.27
Amount Tendered			$20.00
Change			$11.73

SALES



STOCK MARKET COMPUTER APPLICATIONS

CONTRIBUTOR:
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Objectives:

- The student will study the stock market by:
  1) selecting stocks to be included in portfolio
  2) determining daily/weekly prices of stocks selected
  3) maintaining records of stocks selected
  4) preparing graphic charts to show stock trends

Procedure:

- After a basic study of stocks and the market, the instructor can infuse computer use into almost any business/social science/consumer/or related area with the project. This project includes the use of spreadsheets, graphics, word processing, database, and optional telecommunication.

Step 1. Make Stock Selection (database\word processing\merging)

_______ You have been awarded $10,000 and now have the task of investigating the purchase of five different companies that are listed on a major stock exchange. Use the spreadsheet program described in step 3 to come as close to $10,000 as possible.

_______ Obtain names of corporate officers and addresses from the library or a stock broker. (Note: Such information is available in *Standard and Poor's*.)

_______ Use word processing software to write a form letter requesting certain information on the corporation. Requests might include asking for annual reports or other data on the company.

_______ Enter names and addresses into the computer using database software. Merge the form letter and the database to make a "personalized" letter to the corporation. Address envelopes and mail your letters.

Step 2. Determine Daily/Weekly Prices (telecommunications/modem/or newspaper)

_______ Obtain current stock prices using telecommunications or a newspaper. (Note: Many sources include stock quotes in their subscriber services.)

Step 3. Maintain Records of Prices and Value (spreadsheet.)

_______ Enter the data collected in Step 1. (Note: Exact formulas will differ with different software, however principals are the same.)

```
            A                 B                C                   D
1           Name              Starting         Number              Total
2                             Price            Shares              Value
3
4           XXX               $$$              XX                  (B4*C4)
5           XXX               $$$              XX                  (B5*C5)
6           XXX               $$$              XX                  (B6*C6)
7           XXX               $$$              XX                  (B7*C7)
8           XXX               $$$              XX                  (B8*C8)
9
10          CURRENT TOTAL VALUE                                    @sum(D4:D8)

11          INITIAL INVESTMENT                                     10,000
12          CURRENT PROFIT/LOSS                                    (10000-D10)
13---------------------------------------------------------------------------------------
14          ENTER CURRENT PROFIT/LOSS IN THE CORRECT SPACE BELOW:
15
16          WEEK 1         WEEK 2           WEEK 3           WEEK 4           WEEK 5     ETC.
            XXX            XXX              XXX              XXX              XXX
```

Step 4. Chart Prices/Trends (graphic software).

_______ Use a graphic program to make line or base charts to show trends.

Step 5. Prepare Portfolio

_______ Complete project by turning in folder with copies of all letters, spreadsheets, graphs, materials received.

_______ Prepare a summary of what was learned and used in this project.

Materials Needed:

- Computer, Printer, Modem, and Software: spreadsheet, word processing, database, graphics, and telecommunications.

Additional Comments:

- Teacher may make this a template, or students can enter on their own data disk.

COMPUTER CONFERENCING

CONTRIBUTOR:
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Objectives:

- The student will enhance personal critical thinking and reasoning skills by interacting with others during a computer conference for arriving at a consensus when proposing a solution to a problem in consumer law.

Procedures:

- Have students complete a training session on how to access a computer conference and make contributions.

- Assign a problem in consumer law and charge them to arrive at a consensus for proposing a solution within a one-week period.

- Request students to contribute at least six comments to the conference making specific reference to a set of journal articles. Comments contributed must be between 125 and 175 words and include at least one reference or journal article to substantiate thoughts being subjected to analysis by classmates.

- Have students transmit their version of the final consensus by means of electronic mail to their instructor using between 350 and 450 words.

Materials needed:

- The project was completed with Grouptalk software, an interactive software program developed by IBM.

- BITNET, a wide area academic network over which the conferencing system operates, was utilized with students accessing IBM, Zenith, HP, and Apple personal computers.

- Students were required to have passwords and account codes to enable them to access the IBM mainframe on campus. (Student comments were stored on the IBM mainframe and thus no disks were required.)

Comments:

- Any institution that has networking and electronic mail capabilities may easily utilize Grouptalk conferencing.
- No computing prerequisites are necessary in that the relative ease with which to access the computer conference and to make contributions permits students to collaborate during the debate without having extensive prior experience using personal computers.
- Students indicated they devoted more time interpreting their readings and thinking of how to respond to questions from their classmates than they would have had they completed the project during regular class sessions.
- Computer conferencing enables students to become "proactive" in the learning process since they are required to put together "bits and pieces" of prior learnings by actively engaging in a nontraditional academic forum where critical thinking is elevated to center stage.

WORKING WITH PERCENTS: A SPREADSHEET APPLICATION

CONTRIBUTOR:
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Objectives:

- The student will improve his/her ability to work with percents and to interpret tables containing percent information.
- The student will develop ability to write spreadsheet formulas for calculating percents.

Procedures:

- **Teacher:**

  1. Review the **BASE*RATE=PERCENTAGE** formula; clarify synonyms: Base = Whole, Rate = Percent, Percentages = Part.
  2. Present table (Transparency Master--Basic Table 0) containing the "raw data" on which percents are based. Precede presentation of table with some questions to focus students on the table topic. Mention that tables have table numbers, titles, column headings, and sources so that readers know what is on the table.
  3. Ask students what they can say about the group represented on the table. Ask what is the "whole" and what are the parts of the whole. Ask how percents help readers to understand numeric information.
  4. Demonstrate how the percent column would be calculated manually using the Part/Base=Percent formula (see Transparency Master--Basic Table); demonstrate how the totals and percent column would be calculated with spreadsheet formulas (use Transparency Master--Spreadsheet).
  5. Ask students to state some fact from the table which might appear interesting or surprising. Prompt with additional questions which require cumulations or several percents. (See sample questions under Materials).
  6. Show students how to prepare the sample planning form for Table 1. (See sample planning form.) Clarify whether or not students will use the computer to complete Step 2 of the assignment.

- **Students:**

    7. Based on the worksheet, complete a planning form for each table: create the table number, title, and source citation; write the formulas for totals and percents as they would appear on the spreadsheet.

    8. As directed by the teacher, **EITHER** retrieve a partially completed/formatted spreadsheet and complete/print the spreadsheet based on Step 7, **OR** complete the calculations manually on the planning form.

    9. On the spreadsheet or the planning form, write two facts that seem interesting or unusual from the table and show how the facts were derived.

- **Class:**

    10. Compare the facts that different class members developed based on the tables.

Materials needed:

- Transparency/Handout Master for **TABLE 0 (BASIC TABLE AND SPREADSHEET)**.

    The topic of the table is tourism. Before presenting the basic table, the teacher may want to ask students about theme parks (in contrast to amusement parks) and which they think are the most popular. The formulas can be written onto the transparency as the teacher presents the percent formula. Then the spreadsheet master can be used. At the teacher's option, the use of absolute cell reference and formula copying can be introduced. However, these can also be introduced in a later lesson or by a handout.

- Transparency/Handout Master **SPREADSHEET PLANNING FORM FOR TABLE 1.** A partially completed form for Table 1 in the Student Worksheet is provided as a starting place.

- Student worksheet master **WORKING WITH PERCENTS** containing data for three additional tables. Tables are based on World Tourist Organization data cited in the same source as Table 0. Teachers should use partially created/formatted spreadsheets for Tables 1 and 2 if this is a first exposure to the spreadsheet. Table 3 should be attempted from "scratch."

- Optional, but recommended--Partially created/formatted spreadsheets for computer demonstration on Table 0 and for student work on Tables 1 and 2. Textbook reading and exercises may be used in addition to this exercise.

Comments:

- Contributor's Comments:

--If no computers are available for the classroom, the exercises would still accomplish the basic objectives of improved business mathematics. Students can also learn to plan a spreadsheet by completing the planning form.

--If computers are used and this is a first exposure to spreadsheets for students, use a partially prepared spreadsheet so that students focus on the application of the percent formula to the spreadsheet. Then use additional lessons to expand mechanics of the spreadsheet. Keep students focused on the business mathematics objectives.

--The formulas given are generic and will work in many spreadsheet products. The formulas for totals are based on Lotus 1-2-3.

--A logical continuation of this exercise is to move next to percent increases and decreases. Tables reporting data for two years (for example, sales in different categories for 1989 and 1990) can be used for horizontal analysis. From there, the use of graphs, particularly pie charts, to display the table information can be introduced. It is important to also work from the graphs to reconstruct the original figures, reinforcing the Base*Rate=Percentage formula. A challenge application would have the student write a memorandum report, incorporating information from several tables and graphs on the same general topic, such as the tourism data presented in this material.

Solution:

- WORKING WITH PERCENTS: A SOLUTIONS KEY

Table 0 (Key)

Theme Park Attendance in 1990.

Theme Park	Attendance in Millions	Percent	Formula Key
Disney World/MGM (Florida)	28.5	34.76%	(B8/$B$18)
Disneyland (California)	12.9	15.73%	(B9/$B$18)
Disneyland (Tokyo)	12.0	14.63%	(B10/$B$18)
Knott's Berry Farm (California	5.0	6.10%	(B11/$B$18)
Lotto World (Korea)	4.6	5.61%	(B12/$B$18)
Universal Studios (California)	4.6	5.61%	(B13/$B$18)
Tivoli Gardens (Denmark)	4.1	5.00%	(B14/$B$18)
Sea World (Florida)	3.8	4.63%	(B15/$B$18)
Sea World (California)	3.3	4.02%	(B16/$B$18)
Kings Island (Ohio)	3.2	3.90%	(B17/$B$18)
Total	82.0	100.00%	(B18/$B$18)

Note: Data are from Amusement Business cited in "Too Many People and Not Enough Places to Go" by P. C. Elsworth, 1991 (May 26), The New York Times, p. 4F.

Table 1 (Key)

Most Popular Tourist Destinations in 1990.

Destination	Attendance in Millions	Percent	Formula Key
Austria	19.0	4.43%	(B8/$B$19)
Britain	17.7	4.12%	(B9/$B$19)
Canada	15.2	3.54%	(B10/$B$19)
France	50.0	11.65%	(B11/$B$19)
Germany	15.6	3.63%	(B12/$B$19)
Hungary	19.0	4.43%	(B13/$B$19)
Italy	26.7	6.22%	(B14/$B$19)
Spain	34.3	7.99%	(B15/$B$19)
Switzerland	12.8	2.98%	(B16/$B$19)
United States	39.8	9.27%	(B17/$B$19)
Other	179.1	41.73%	(B18/$B$19)
Total	429.2	100.00%	(B19/$B$19)

Note: Data are from World Tourist Organization cited in "Too Many People and Not Enough Places to Go" by P. C. Elsworth, 1991 (May 26), The New York Times, p. 4F.

Step 3:

1. What percent of tourists go to European countries? 45.46%
   That's 195.1/429.2. The formula is: @SUM(B8.B9,B11.B16)/B19.
2. What percent travel to North America? 12.81%
   That's 55.0/429.2. The formula is: (B10+B17)/B19.
3. What percent of tourists go to "Other" places? 41.73%
   That's 179.1/429.2. The formula is: (B18/B19).
4. Of tourists going to Europe, what percent go to France? 25.63%
   That's 50.1/195.1. The formula is (B11/@SUM(B8.B9,B11.B16).

Assumptions: In Question 1, assume Other is not European; in Question 2, assume Other is not North America. Discuss with students the importance of assumptions, for different answers can be correct if different assumptions are made.

Table 2 (Key)

Travel to Key Areas of the World in 1990.

Key World Areas	Attendance in Millions	Percent	Formula Key
Africa	14.0	3.26%	(B8/$B$14)
Americas	84.0	19.57%	(B9/$B$14)
East Asia/Pacific	46.5	10.83%	(B10/$B$14)
Europe	275.5	64.19%	(B11/$B$14)
Mideast	6.0	1.40%	(B12/$B$14)
South Asia	3.2	0.75%	(B13/$B$14)
Total	429.2	100.00%	(B14/$B$14)

Note: Data are from World Tourism Organization cited in "Too Many People and Not Enough Places to Go" by P. C. Elsworth, 1991 (May 26), The New York Times, p. 4F.

Table 3 (Key)

Biggest World "Spenders" on Tourism in 1990.

Destination	Attendance in Millions	Percent	Formula Key
Austria	6.3	2.71%	(B8/$B$19)
Britain	19.8	8.53%	(B9/$B$19)
Canada	8.4	3.62%	(B10/$B$19)
France	13.5	5.81%	(B11/$B$19)
Germany	30.1	12.96%	(B12/$B$19)
Italy	10.8	4.65%	(B13/$B$19)
Japan	24.9	10.72%	(B14/$B$19)
Netherlands	7.4	3.19%	(B15/$B$19)
Sweden	6.1	2.63%	(B16/$B$19)
United States	38.6	16.62%	(B17/$B$19)
Other	66.3	28.55%	(B18/$B$19)
Total	232.2	100.00%	(B19/$B$19)

Note: Data are from World Tourism Organization cited in "Too Many People and Not Enough Places to Go" by P. C. Elsworth, 1991 (May 26), The New York Times, p. 4F.

TRANSPARENCY MASTER FOR TABLE 0 (Basic Table)

Table 0

Theme Park Attendance in 1990.

Theme Park	Attendance in Millions	Percent
Disney World/MGM (Florida)	28.5	
Disneyland (California)	12.9	
Disneyland (Tokyo)	12.0	
Knott's Berry Farm (California)	5.0	
Lotto World (Korea)	4.6	
Universal Studios (California)	4.6	
Tivoli Gardens (Denmark)	4.1	
Sea World (Florida)	3.8	
Sea World (California)	3.3	
Kings Island (Ohio)	3.2	
Total		

Note: Data are from Amusement Business cited in "Too Many People and Not Enough Places to Go" by P. C. Elsworth, 1991 (May 26), The New York Times, p. 4F.

TRANSPARENCY MASTER FOR TABLE 0 (Spreadsheet)

	A	B	C	
1	Table 0			
2				
3	Theme Park Attendance in 1990.			
4				
5				
6	Theme Park	Attendance in Millions	Percent	Alternative
7				
8	Disney World/MGM (Florida)	28.5	(B8/B18)	(B8/$B$18)
9	Disneyland (California)	12.9	(B9/B18)	
10	Disneyland (Tokyo)	12.0		
11	Knott's Berry Farm (California)	5.0		
12	Lotto World (Korea)	4.6		
13	Universal Studios (California)	4.6		
14	Tivoli Gardens (Denmark)	4.1		
15	Sea World (Florida)	3.8		
16	Sea World (California)	3.3		
17	Kings Island (Ohio)	3.2		
18	Total	@SUM(B8.B17)		
19				
20	Note: Data are from Amusement Business cited in "Too Many People and Not Enough Places to			
21	Go" by P. C. Elsworth, 1991 (May 26), The New York Times, p. 4F.			

Part/Base=Percent

Use absolute reference for the base and copy down.

Format column C for percent.

Enter in one cell and use cell overflow for long text entries

Consumer Economics/Personal Finance/Business Math

SPREADSHEET PLANNING FORM FOR TABLE 1

	A	B	C	
1	Table ________ (Insert table number)			
2				
3	____			(Insert title)
4				
5	________________	________	________	(Create headings)
6				
7	Austria	19.0	________	(Create formulas)
8	Britain	17.7	________	
9	Canada	15.2	________	
10	France	50.0	________	
11	Germany	15.6	________	
12	________________	________	________	
13	________________	________	________	
14	________________	________	________	
15	________________	________	________	
16	________________	________	________	
17	________________	________	________	
18				
19	Total	________	________	
20				
21	Note: Data are from ______________________________.			

Consumer Economics/Personal Finance/Business Math

WORKING WITH PERCENTS: A Spreadsheet Application Student Worksheet

Exercises: Apply your knowledge of percents, spreadsheet formulas, and tables to plan three tables. You will first prepare a planning form for the table. Your teacher may then ask you to retrieve a spreadsheet file and have you complete the table on spreadsheet software. For each table, complete these steps:

Step 1: Complete a planning form for a spreadsheet. Use a sample form for Table 1 as a guide.
--Record your table number and title on this worksheet.
--Decide what column headings to use and write them on the worksheet.
--Write the formulas for totals and percents.
--Prepare the source citation.

Step 2: Complete the calculations as your teacher directs, either on the planning form or by completing/printing the spreadsheet.

Step 3: Think about your data. What other information can you obtain from your figures? Write at least two new facts on the worksheet or the printout of your spreadsheet.

Step 4: Submit your planning forms and your printed spreadsheets as your teacher directs.

Table 1

These 1990 figures show the 10 most popular destinations for tourists. The figures are shown in millions (39.8 means 39,800,000). They are from the World Tourist Organization, cited in P.C. Elsworth's article "Too Many People and Not Enough Places to Go," which appeared in **The New York Times**, p. 4F (1991, May 26):

Austria	19.0	Germany	15.6	Switzerland	12.8
Britain	17.7	Hungary	19.0	United Stated	39.8
Canada	15.2	Italy	26.7	Other	179.1
France	50.0	Spain	34.3		

Complete Step 1. Follow the sample planning form as your teacher reviews it with you. Fill in all the blanks as they would appear on a spreadsheet. Now follow your teacher's directions for Step 2. For Step 3, here are a couple of suggestions: What percent of tourists go to European countries? What percent of tourists travel to North America? What percent of tourists go to Latin America, Asian countries, Australia, or other places? Challenge question: Of tourists going to Europe, what percent go to France? to Italy?

Table 2

The 1990 figures from World Tourist Organization show worldwide travel to key areas of the world. They are in millions and are cited in Mr. Elworth's article (see Table 1). Design your own planning sheet for this table. Use the form and the procedures for Table 1 as a guide.

Africa	14.0	Americas	84.0	East Asia/ Pacific	46.5
Europe	275.5	Mideast	6.0		
South Asia	3.2				

Table 3

The data are for the biggest spenders on tourism. The 1990 figures are from the World Tourist Organization. They are in millions and are cited in Mr. Elworth's article (see Table 1). Now design your spreadsheet.

Use the forms and the procedures for Table 1 as a guide.

Britain	19.8	Japan	24.9	Other	66.3
Sweden	6.1	Austria	6.3	Netherlands	7.4
Canada	8.4	Germany	30.1	United States	38.6
France	13.5	Italy	10.8		

Challenge Problem

Write a short memorandum report on tourism in 1990 based on the data you have in your tables which answers the question: What did the typical tourist/traveller do in 1990? (That is, where was he/she most likely to go? Where was he/she least likely to go? And so on.) Try to refer to your tables and to some of the facts you created in analyzing the table.

REVISION OF PERSONAL BUDGET

CONTRIBUTOR:
Bonnie Smith
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Objectives:

- The student will develop a spreadsheet template to prepare and revise a family budget.

Procedures:

- Discuss the parts of a budget.
- Have student prepare a budget following the handout, **MONTHLY BUDGET**.

Materials needed:

- Handout: **MONTHLY BUDGET**
- Computer, spreadsheet software

Solution:

- Answers to Question 2:

--The Smith's new net income is $1,400.

--Expenses in their budget that would be fixed:
Rent
Utilities (if on a "budget" plan with the utility company)
Insurance
Cable
Car Payment

These answers could vary; but if an expense is identified as a fixed expense, the amount would stay the same each budget period unless a goal is changed or completed.

--Expenses that could increase:
The Investment Fund could increase if it is to be used to pay the tuition.
Gasoline may increase; Mrs. Smith is now traveling to school and work instead of just to work.

--The easiest way to plan for the cost of tuition and books would be to allot for the expense each month. Plan for a large expense that you know is going to occur. If they were to allot $125 per month, they would have enough to pay for this expense for the year.

MONTHLY BUDGET

1. Develop a template for the monthly budget for Mr. and Mrs. Steve Smith. (A sample template is shown at the end of this exercise.) Next, enter the Smith's income and expenses from the figures provided below. Remember to use the appropriate spreadsheet features for monetary figures. Print a copy of the Smith's Budget.

Monthly Net Income: $1,700

Expenses:

Rent	$300	Cable	$ 30
Utilities	$ 50	Savings	$150
Gasoline	$100	Car Payment	$110
Insurance	$ 90	Car Maintenance	$ 30
Groceries	$200	Telephone	$ 50
Investment Fund	$ 90	Entertainment	$100
Dental/Medical	$100	Miscellaneous	$165
Charge Accounts	$135		

2. Prepare a revised budget for Mr. and Mrs. Smith. When Mrs. Smith works part time instead of full time, her net take-home pay decreases by $300 per month. She decides to return to college for her master's degree. Tuition is $1,200 a year and books are $300 a year.

Answer these questions before making the revised budget:

--What is the Smith's new net income?____________________

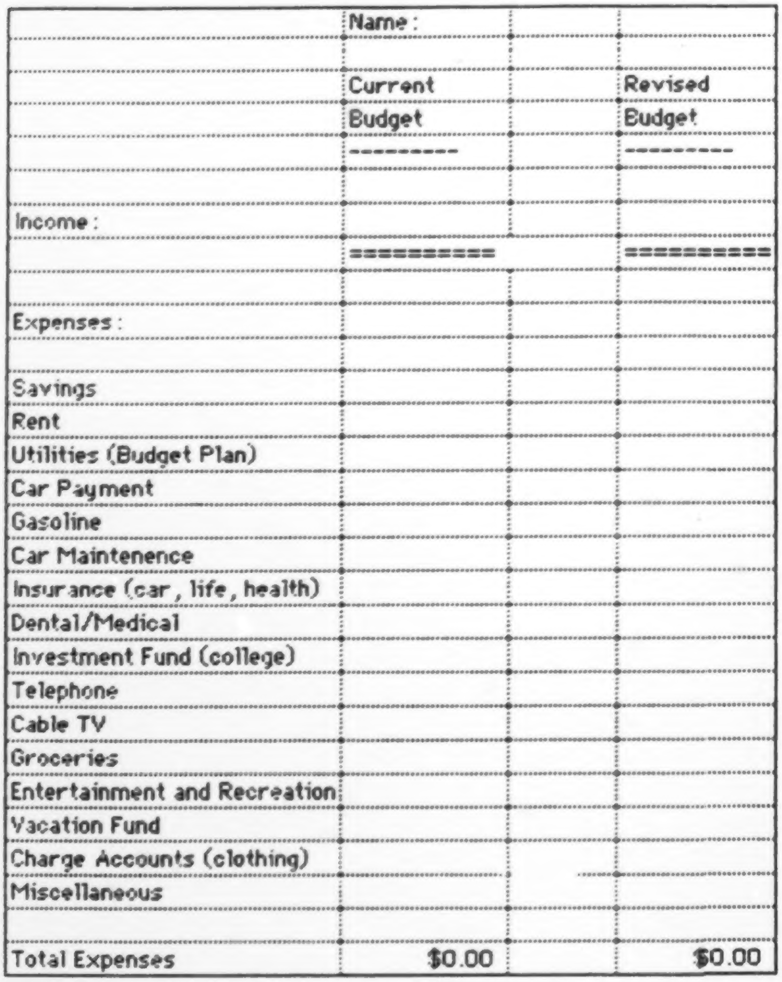
--What expenses in their budget would be fixed even through their income has gone down?

--Are there any expenses that would increase since Mrs. Smith is going back to school?

--What would be the easiest way to plan tuition and book costs in the Smith's budget? How much would they need to allot each month?

Budgeting Case Problem I

Enter the figures for the Smith's revised budget on your spreadsheet. Enter the fixed expenses first as well as the allotment for college expenses. Then, adjust the variable expenses accordingly. Make sure you have not cut variable "must" expenses too drastically. Be sure you have a balanced budget. Print a copy of the revised budget.



	Name :		
	Current		Revised
	Budget		Budget
	---------		---------
Income :			
	==========		==========
Expenses :			
Savings			
Rent			
Utilities (Budget Plan)			
Car Payment			
Gasoline			
Car Maintenence			
Insurance (car, life, health)			
Dental/Medical			
Investment Fund (college)			
Telephone			
Cable TV			
Groceries			
Entertainment and Recreation			
Vacation Fund			
Charge Accounts (clothing)			
Miscellaneous			
Total Expenses	$0.00		$0.00

Keyboarding/ Typewriting

Category 5

No additional activities.

Office Procedures/
Office Management
Records Management

Category 6

USING WORD PROCESSING AS A COMMUNICATIONS TOOL

CONTRIBUTOR
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Objectives:

- The student will research current readings in information processing technology and use word processing features to complete writing assignments.

Procedures:

- Distribute handout: READING CRITIQUES ASSIGNMENT SHEET.
- Direct students to find and critique an article about a designated information processing topic. Have the students write a summary and a critique of the article.
- Key the summary and the critique using word processing software incorporating specific features of the software into the formatting of the report. Have students print out a copy of their reports and store their documents using designated file names, i.e., crit.1.
- Have students submit a hard copy of the report, a copy of the article, and the diskette for grading. Evaluation (see attached sheet) is designed to assess both written communication skills and the word processing skills.

Materials needed:

- Handout: READING CRITIQUES ASSIGNMENT SHEET
- WordPerfect 5.0 or 5.1 or any word processing software.

Comments:

- Students need basic keyboarding skills for this assignment. This assignment was used in an introductory office systems class; however, it could be adapted to any business education class where the software emphasis is for personal use rather than job skills development.
- Before a critique is due, conduct a demonstration to introduce software features to be incorporated into the writing assignments. As students becomes familiar with the software, a grammar check package could be introduced. The skill of composing at the computer could also be reinforced in this assignment.

READING CRITIQUES ASSIGNMENT SHEET

The purpose of this assignment is to expose you to various information resources used by today's office managers and workers. You will apply what you have learned from the textbook to the "real world" as you incorporate word processing features into your paper. Four critiques are to be submitted from the following topic areas.

Critique #1	
Topic Area:	Office Automation in General
WP Features:	Double spacing, center, no justification, underline, corrections, save, filenames, print
Critique # 2	
Topic Area:	Office Automation Hardware
WP Features:	Bold, move, page centering, indent, paragraph, list files, flush right, spell check, and date
Critique # 3	
Topic Area:	Office Automation Software, i.e. Desktop Publishing
	Page numbering, hard page break, block, move, double indent
Critique # 3	
Topic Area:	Telecommunications
WP Features:	Headers/footers, thesaurus

Newspaper articles must be at least ONE full column in length (minimum 950 words) and magazine articles must be at least two full pages (minimum 2,000 words). Please choose an article you can understand and write about.

Articles should be current--three months or less. The following sources are suggested and no more than two articles may be from any one source. See your instructor if you want to use a different source.

MAGAZINES: *Administrative Management, Forbes, Time, Business Week, Money, Fortune, U.S. News and World Report, Newsweek, The Office, DATAPRO, P. C., Datamation, Information Systems News, Today's Office, Office Systems, Working Woman, Auerbach Reports, Infosystems, Management Technology, MIS Week, Modern Office Technology, The Seybold Report on Office Systems, Computer World.*

NEWSPAPERS: *The Wall Street Journal, New York Times, Philadelphia Inquirer.* (You may use good articles from local newspaper.)

FORMAT: Each time a critique is due you will be asked to demonstrate certain features of WordPerfect. The items listed after the due date schedule must be included in the critique. For the first critique you will be double spacing and using the default margins. Prepare a cover page with your name and title of the article. You should have two pages--one for your summary and one for your critique. The bibliography page should include the full citation for the reference used. If a footnote page is appropriate, please include. The last pages will be a copy of the article. Also hand in your diskette.

PLAGIARISM: You are NOT TO USE THE AUTHOR'S exact words, phrases, etc. without giving credit to the author by a footnote or acceptable citation. An automatic zero will be given if you do this. Ten points will be deducted for each day the report is late and 20 points will be deducted if you choose to resubmit the critique.

GRADING: The following criteria will be used to grade the critiques.

1. Does the summary page include the purpose of the article and present clear and accurate information?
2. Does the critique section provide a rationale for agreement or disagreement based on a logical sequence of ideas--other than those already cited by the author--which indicate how the article relates to office automation concepts and applications, or the role of the office manager?
3. Is the overall critique well written, free of spelling/typographical errors or grammar/syntax errors?
4. Has the student demonstrated correct WordPerfect techniques?

READING EVALUATION

Article

Summary:	Is the article current?	____ (3)
	Is the content appropriate?	____ (3)
	Did the student understand the article	____ (3)
Critique:	Did the student apply textbook concepts?	____ (3)
	Did the student express an opinion?	____ (3)
Technical:	Good grammar, spelling and punctuation?	____ (3)
	Format correct?	____ (2)

Computer Disk

Did the student demonstrate the required operation?	____ (3)
Did the student use the correct file name?	____ (2)
Total points	____(25)

MICROCOMPUTER TRAINING SESSION

CONTRIBUTOR:
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Objective:

- The student will learn a new feature or function of a software package by independently using a reference manual (or textbook).
- The student will prepare an instructional sheet listing the steps for performing the new feature.
- The student will teach the new feature to other students (on-the-job-training).

Procedures:

- Explain to students that many times on the job no one may be available to teach them a new software program or a specific software feature. Therefore, they need to know how to read a manual and to learn on their own.
- Explain to students the importance of not only learning microcomputer application software programs but also training others in the office to use software (informal on-the job-training or formal training and development).
- Provide sample training sessions for the students to illustrate how to informally or formally train others on the job.
- Provide sample handouts on basic steps or procedures for performing a particular software feature. For example, the steps for creating headers and footers using WordPerfect; the steps for creating and using a macro on Lotus 1-2-3; or steps for sorting data using DBase IV. Explain to the students how to list the steps so that they can be used later as reference on the job. Have the students develop a notebook of computer procedures to take with them to their own offices.
- Give students a list of software or functions from which to select for their training session (or assign one).
- Provide reference manuals or software documentation for students to use to learn the new feature or function.
- Develop a schedule with students' names and dates for their training sessions.

- Have each student conduct a training session in which the student is the "trainer" and the rest of the class members serve as the office workers or participants in the training session.

- Evaluate each student on the procedure sheet developed, on the method of training, etc. (See sample evaluation sheet.)

Materials needed:

- Handout: **EVALUATION OF TRAINING SESSIONS**

- Training manuals or documentation for software programs

Comments:

- This activity has two main purposes. The first one is to help students understand how to learn new procedures on their own when they are employed. The second one is to help them see how to "train" or help others learn new procedures on the job.

Name____

EVALUATION OF TRAINING SESSION

Introduction

1. Introduction of Presenter	5	4	3	2	1
2. Statement of Objective/Purpose	5	4	3	2	1

Method of Presentation

1. Introduction of Topic	5	4	3	2	1
2. Explanation of Procedural Steps	5	4	3	2	1
3. Manner of Presentation (Poise, Eye Contact, Voice Level)	5	4	3	2	1
4. Management of Time and Resources	5	4	3	2	1
5. Response to Questions (or Problems)	5	4	3	2	1
6. Summary of Topic	5	4	3	2	1

Information Sheet

1. Appearance	5	4	3	2	1
2. Length	5	4	3	2	1
3. Accuracy of Information	5	4	3	2	1

Comments:

____

____

____

Final Score______________________ Grade__________________________

WORD PROCESSING

CONTRIBUTORS:
Carol R. Scott
Virginia Correctional Center for Women
Goochland, VA
Alma G. Stills
Lee-Davis High School
Mechanicsville, VA

Objectives:

- The student will use library facilities to research questions related to a specific career choice.
- The student will decide what information is pertinent and will compose a one- to two-page keyed report using word processing.
- The student will prepare a summary of the report to share with the class.

Procedures:

- Distribute handout: **POSSIBLE CAREER CHOICES**
- Place appropriate books on reserve in the library for use during this project. (Depending upon the library's collection, you may need to add to the resources they have on careers. Check with your guidance counselor for additional material as well.)
- Set aside class time for students to use the library to research their assignment.
- Provide class time for students to key their report.

Materials needed:

- Handout: **POSSIBLE CAREER CHOICES**. Appropriate career-related materials, books, and other publications.

Comments:

- This assignment involves researching (reading) different information sources. Students should be encouraged to explore and discover ideas on their own.
- Provide structure and direction so that students are not left on their own.

POSSIBLE CAREER CHOICES

medicine

law

fashion design

emergency services

education

library science

retail store

pharmacy

food store

clerical

engineering:
  1. architecture
  2. mechanical
  3. civil
  4. electrical
  5. chemical
  6. hydraulic

scientific research

food services
  1. fast food
  2. restaurant

assembly line work

travel agencies

others: ______________

____

____

==

SAMPLE QUESTIONS TO GUIDE YOUR RESEARCH

1. Why are computers considered necessary to your career?
2. When were computers introduced to your career?
3. Who was responsible for introducing computers to your career?
4. How does the cost of computers affect their acquisition and use?
5. What other factors have influenced the use of computers in your career area?
6. What jobs or tasks were changed when computers were introduced to your career?
7. What additional information did you discover while preparing your report?

SUPERVISOR'S ASSISTANT

CONTRIBUTOR:
Pat Sohacki
Area Career Center
Hammond, IN 36320

Objectives:

- The student will receive "real-time" experience as an assistant/secretary to the supervisor/instructor.

Procedures:

- Orient the assistant (student) to the responsibilities he/she is expected to perform.
- Provide explanation and guidance to assist (student) as needed.

Materials needed:

- Telephone
- Forms: **JOB DESCRIPTION AND DUTIES, EVALUATION, ASSISTANT'S WORK COMPLETION SHEET.**

Comments:

- This procedure is self-explanatory. Students' tasks can be adjusted to supervisor's (instructor's) needs. This exercise is useful prior to any on-the-job training program. Items for assistant (student) evaluation can be changed to meet varying classroom settings.

Terminology:

- Incumbent: Holder of an office.

Job Description and Duties for Supervisor's Assistant
(Three-Week Time Frame)

1. Answer telephone for supervisor: (Response Suggestions)
    - "Good morning/Afternoon. Data Processing Lab."
    - "May I ask who is calling?"
    - Take message if supervisor is unavailable: " ________ is unable to come to the phone, may I take a message?"
2. System hardware housekeeping:
    - Remind students to clean work area daily.
    - Turn off equipment, and put chairs in their proper places.
    - Report any equipment failure to supervisor and assist in packaging the equipment for repair.
3. System software housekeeping:
    - Diskettes stored in required order.
    - Assist supervisor as directed with software maintenance.
4. Student job organization:
    - Return graded and recorded jobs to students.
    - Remind students to complete their tasks.
    - Check files periodically. If extra copies of jobs, lessons, etc., need to be made, give masters to aide.
5. General housekeeping:
    - Replace paper or ribbons in printers when required.
    - Clean CRT screens and dust weekly.
    - Remind students to keep work areas organized.
6. Miscellaneous
    - Complete typing, filing, and other assignments given to you by supervisor.

Note: The incumbent trains the incoming assistant the last two days of her/his service. You should be available to answer questions following completion of your assignment as assistant.

EVALUATION FORM

NAME SECTION ______________________   STARTING DATE _______ ____/____/____   ENDING DATE ____/____/_____

ASSISTANTS WILL BE EVALUATED ON THE FOLLOWING CRITERIA:

- COMPLETES REQUIRED TASKS
- FOLLOWS DIRECTIONS: WRITTEN AND ORAL
- WORKS INDEPENDENTLY
- HAS INITIATIVE
- COMPLETES QUALITY WORK
- HAS PROFESSIONAL ATTITUDE
- DEPENDABLE AND PUNCTUAL

==

Rating Code: 1 very poor, 2 poor, 3 average, 4 good, 5 superior

==

Evaluation Dates

Characteristics	_____	_____	_____	_____	_____	_____
1. Completes assigned tasks						
2. Follows directions						
3. Works independently						
4. Shows initiative						
5. Does quality work						
6. Has professional attitude						
7. Is punctual/dependable						

Comments: ____

____

____

Final Evaluation Rating: ____________________   Grade: ____________________

ASSISTANT'S WORK COMPLETION SHEET

NAME:________________________ DATE HANDED IN: ______________

DATE	TIME	

FILL OUT THIS FORM AT THE END OF EACH WORK DAY AND TURN IN TO THE SUPERVISOR AT THE END OF EACH WEEK. COMPLETE THIS TASK FAITHFULLY. ASSISTANTS WILL BE EVALUATED BY THE RECORDS THEY KEEP AS WELL AS THE TASKS THEY PERFORM.

THIS RECORD IS COMPLETE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

____
STUDENT SIGNATURE

ERGONOMICS PROJECT

CONTRIBUTORS:
Sue Walter
Loveland High School
Loveland, CO 80537
Kim Young
Thompson Valley High
Loveland, CO 80537

Objectives:

- The student will apply ergonomics principles to the design of an office.

Procedures:

- Review principles of ergonomics at work with students.
- Distribute handouts: **ERGONOMICS PROJECT** and **ERGONOMICS PROJECT GRADING SHEET**.

Materials needed:

- Handouts: **ERGONOMICS PROJECT** and **ERGONOMICS PROJECT GRADING SHEET**.
- Word processing software.
- Office supply catalogs.

Comments:

- This activity should be completed toward the end of the term after students have become familiar with all office systems.
- This activity works well as a final project.

ERGONOMICS PROJECT

Your employer has opened a branch office in Loveland. You are to design a work station for an administrative assistant in this office. The branch office will have a great deal of communication with office headquarters in California. Take into consideration the ergonomic issues discussed in class as well as your knowledge of the ergonomic factors at your training station.

You are responsible for the complete layout and design of this office as well as writing a final report describing your layout and design. You will also purchase all supplies and equipment necessary to make this a working office.

RESOURCES AVAILABLE:

- Office supply stores in the area
- Office supply catalogs
- Your textbook
- Other: ________________________________

CONSIDERATION:

- Supplies--pens, paper, paper clips, rubber bands, staples, etc.
- Office layout
- Color scheme
- Office decor (pictures, murals, etc.). Will you buy or leave these items?
- Equipment--telephone, computer, printers

BUDGET:

- You should be able to support all decisions. You will need documentation for all large purchases. (Purchases over $100.)
- Your employer doesn't expect you to purchase the least expensive items on the market, nor the top of the line. Be considerate and professional.

GRADING: You will need to submit the following:

1. Office layout and design
2. Equipment and supply lists (with necessary documentation.)
3. A written report to your employer describing your layout and design. You may prefer to include your office layout (#1) and your equipment and supply list (#2) with your written report. (Use word processing software to prepare the text portion of your report.)

Name ______________________________

ERGONOMICS PROJECT GRADING SHEET

OFFICE LAYOUT

Neatness	_____ 10
Usability	_____ 10
Work Flow	_____ 10

EQUIPMENT & SUPPLIES

Thoroughness of Order	_____ 10
Correct Quantity	_____ 10
Cost	_____ 10

WRITTEN SUMMARY

Justification	_____ 10
Grammar	_____ 10
Documentation -- Sources	_____ 10
TOTAL POINTS	____ 100

COMMENTS:

____

____

____

____

General Business/
Basic Business/
Introduction to Business

Category 7

USING THE COMPUTER FOR BUSINESS PRESENTATIONS

CONTRIBUTOR:
Constance Pollard
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Moscow, ID 83843

Objectives:

- The student will use one or more computer software programs to prepare visual aids to be displayed using a LCD projector or as overhead transparencies.
- The student will give a presentation on a business-related topic using two transparencies prepared with computer software program(s).

Procedures:

- Assign students an oral presentation on a business-related topic in which they use at least two visual aids. Discuss the use of visual aids in presentations for clarifying points and facilitating audience understanding.
- Show students a variety of examples of visual aids and discuss the suitability of each. Visual aids should be easily read from a distance, be concise, and contribute to the understanding of the presentation.
- Demonstrate the use of a word processing program to prepare a visual aid with text. If you have an LCD projector, each aid can be prepared as a separate file and the file displayed through the view or preview option. If not, overheads can be prepared for the presentation. Visual aids that contain text must have type which is large enough for the audience to read. Care must be taken that only important points be included but that they be limited in number. If available, use graphic figures in the footer. Using bullets to emphasize text is also effective. Try variations such as putting a border around the edges of the transparency or using features such as bold and italics.
- Demonstrate the use of a software program to create tables, graphs, or charts to prepare visual aids. A spreadsheet and/or graphics program can be used.
- Have students use one or more computer software programs to prepare presentation visual aids. These can be presented using a LCD projector or overhead transparencies. Some transparency film can be run directly through the laser printer so that students can print their transparencies. If that is not possible, have students make their transparencies from their hard copy.
- Have students give their oral presentations using the LCD projector or overhead transparencies. Presentations and visual aids can be teacher and/or peer-evaluated.

Materials needed:

- Word processing, spreadsheet, or graphics software programs
- Overhead transparency film
- LCD projector (optional but preferable)

Comments:

- The use of visual aids can greatly facilitate a presentation. Students and teachers alike can use computer software programs to create effective presentation materials.

Shorthand/ Machine Transcription

Category 8

DICTATION/TRANSCRIPTION ACTIVITY

Contributor
Diane C. Davis
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Carbondale, IL 62901

Objectives:

- The student will apply proper dictation when using dictation equipment to dictate a letter.
- The student will use word processing software to transcribe another student's dictation in mailable copy.

Procedures:

- Discuss procedures and techniques for dictation.
- Give students a paragraph describing an office situation to which a response needs to be made; for example, a request for a catalog to a new office supply company; a request for information on a product; or a response to an invitation to speak at a business luncheon. Have students compose and dictate their own responses.
- Evaluate the dictation as well as the transcribed document. (Evaluation may be by students as well as by the teacher if desired. See sample evaluation form for the dictation.)

Materials needed:

- Handout: **DICTATION EVALUATION FORM**
- Word processing software
- Dictation/Transcription Units

Comments:

- This activity has two main purposes: to teach students techniques of dictation and to build transcription skills. Students have an opportunity to write and dictate a letter for someone else to transcribe and to discuss the dictation techniques that they feel are most important.

DICTATION EVALUATION FORM

Dictator: ______________________________

Content of Document

1. Covered topic thoroughly	1	2	3	4	5
2. Used correct grammar and sentence structure	1	2	3	4	5
3. Used tactful remarks to indicate situation	1	2	3	4	5

Dictation Techniques

1. Dictator identified herself/himself	1	2	3	4	5
2. Dictator dictated necessary punctuation	1	2	3	4	5
3. Dictator dictated clear instructions	1	2	3	4	5
4. Dictator spelled difficult words and names	1	2	3	4	5
5. Dictator provided transcriptionist with all the necessary information	1	2	3	4	5

Comments/Suggestions

____

____

____

____

Instructions to the Evaluator: You may use the following scale for evaluating dictation: 1--excellent, no improvement could be made; 2--very good, only a slight minor change suggested; 3--good, several suggestions for minor changes made; 4--poor, several major errors made which offset content or quality of dictation, suggest dictating again; 5--very poor, content quality and/or dictation techniques render the dictation unusable. Dictate again making recommended changes.

Business Law

Category 9

COOPERATIVE LEARNING

CONTRIBUTOR:
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Burlington, CT 06013

Objectives:

- The student will participate in a cooperative learning project to prepare chapter reports.

Procedures:

- List the text chapters to be included in the project. Have students list their top three choices. Divide the class into small groups.
- Place supplemental references on reserve in the school library.
- Distribute the handout COOPERATIVE LEARNING CHAPTER REPORTS and discuss requirements with students.
- Monitor student/group progress throughout the project.

Materials needed:

- Handouts: COOPERATIVE LEARNING CHAPTER REPORTS and GRADING SHEET
- Word processing software, spreadsheet, database, and graphics software (helpful but not necessary).

Comments:

- This cooperative project was used originally in a business law class. The project comprises many disciplines beyond business-related courses. Proper English skills including grammar, punctuation, spelling, and word sense are required. Social science and history skills are used along with library research skills. The project took approximately two weeks to complete.
- Students did little handwriting; all work was completed using word processing. The vocabulary, quizzes, notes, etc., were created on the word processor and adjusted when necessary.

- Presentations were shared. One student would discuss the notes, one student would write the information on the board, and another would observe. Students changed roles for the next day's presentation. Students were responsible for administering and grading quizzes.

- Students used an IBM Model 30/Personal computer, the Multimate word processing system, and the WordPerfect word processing system. Students also used PageMaker, PrintMagic, and PrintShop software systems. Booklets were organized with the use of the photocopy machine, binding machine, and other office equipment.

COOPERATIVE LEARNING CHAPTER REPORTS

Each group will complete the following assignments:

1. Read assigned test chapters.
2. Create notes for duplication and class discussion.
3. Write out vocabulary terms completely.
4. Write out complete answers to assigned chapter problems.
5. Choose at least one case problem from the chapter to discuss. Select a case problem that has a point you wish to make to the class.
6. Complete LIBRARY RESEARCH--See reserve shelf in library. Use class time and/or study hall and/or before or after school.
7. Complete CURRENT RESEARCH--include newspaper articles, magazines, etc. Any research within the past five years may be included. Consult other law books for additional information.
8. Prepare a quiz to be given to the class based upon the class notes and class discussion. (Teacher input needed on this requirement.)
9. Prepare a complete report using word processing. (Follow format assigned by teacher.)
10. Present an oral presentation to the class. (Each group will take approximately two full class periods which will include teacher discussion and the quiz.)

You will each receive a grade on:
a. the typed report
b. the oral presentation
c. the class quiz
d. your individual participation in the group (in other words--DO YOUR SHARE!)
e. your attitude and effort

You may divide the requirements into separate parts--decide among the group which parts need to be done. I will check to see what has been decided.

Name ____________________

Chapters ____________________

BUSINESS LAW
CHAPTER REPORT
GRADING SHEET

I. TYPED REPORT ____

Title page . . . . ____
Table of Contents (optional) . . . ____
Information (notes
    Set up . . . . ____
    Content . . . . ____
Article Summary . . . . ____
Bibliography . . . . ____
Appendix
    Vocabulary . . . . ____
    Applying . . . . ____
    Quiz/answer sheet . . . . ____
Extra page at end . . . . ____

II. ORAL PRESENTATION ____

III. CLASS QUIZ ____

IV. PARTICIPATION ____

Student 1 . . . . ____
Student 2 . . . . ____
Student 3 . . . . ____

V. ATTITUDE AND EFFORT ____

Student 1 . . . . ____
Student 2 . . . . ____
Student 3 . . . . ____

OTHER
COMMENTS ____

____

____

Marketing/ Business Management/ International Business

Category 10

ONE-WEEK UNIT ON GLOBAL BUSINESS

CONTRIBUTOR:
L. McCammon and C. Pilcher
Helena High School
Helena, MT 59601

Objectives:

- The student will be introduced to the concept of global business.

Procedures:

- Distribute handout: **GLOBAL BUSINESS** and review the assignment.
- Distribute handout: **GLOBAL BUSINESS WORKSHEET**. Allow students to choose the country they prefer to study.
- Have students prepare their reports using word processing software.

Materials needed:

- Handouts: **GLOBAL BUSINESS** and **GLOBAL BUSINESS WORKSHEET**
- Current references, such as encyclopedia, which contain information about the countries students choose.
- If available, information can be gathered through telecommunications.

Comments:

- We have initiated a new unit in our Introduction to Business class entitled "Global Business." Much emphasis is placed on the importance of telecommunications, which can provide a relatively easy and inexpensive means of communicating with other countries.
- We demonstrated this means of communicating by having our students prepare and FAX a one-page message to the shorthand and office procedures classes of the Lord Selkirk Regional Comprehensive Secondary School near Winnipeg, Canada. Our FAX message went out on school stationery and their FAX reply came back with photos of their school.

GLOBAL BUSINESS

Welcome to the WORLD of business! No longer can we claim to be just a citizen of our own city, state, or country. The fish we eat may come from Canada, the clothing we wear may come from Taiwan,, the electric mixer in our kitchen may come from Brazil, and the refrigerator we raid may come from France. Our involvement in the Gulf War exposed many of our friends and relatives to life in the Middle East. Many schools host foreign students from the far corners of the world. Some of us plan to visit foreign lands in the future. World citizenship implies an understanding of the culture and economy of all areas of the globe; this unit in global business has the goal of acquainting you with the following:

- terms used to conduct business with other nations
- methods used to communicate with businesses in other nations
- factors to be considered in business relations with other countries, including:
    - location and time zones
    - local customs and holidays

Assignment

Your assignment will consist of the following items and is DUE IN WRITTEN FORM NO LATER THAN ______________________________.

Your oral report will be given in the class on ___________________________. The oral report should include:

- Name of your country, its capital, and continent where it can be found. (You must be prepared to point this out on the map.)
- At least one product or raw material found in your country.
- The time zone or hours from this country to "yours" if you were to travel there.
- The monetary unit used to purchase items there and the rate of exchange (comparison with U.S. dollar).
- Language(s) spoken and special customs/holidays affecting when/how business would be conducted with that nation.

Use the Global Business Worksheet to record your information.

GLOBAL BUSINESS WORKSHEET

Your Name ______________________________ Period ________

1. Name of Country Chosen: ______________________________
2. Capital of Country: ______________________________
3. Location of Country (continent): ______________________________
4. Product or Raw Material: ______________________________
5. Time Zone or Hours Difference: ______________________________
6. Monetary Unit: __________ Rate of Exchange: __________ =$1__________
7. Language (s) Spoken: ______________________________
8. Special customs and/or holidays affecting when/how business would be conducted with your country:

____

____

____

____

____

____

____

Note: Nos. 1-5 and No. 7 carry 5 points each; No. 6 carries 10 points; No. 8 carries 20 points.

Your oral report to the class will carry up to 40 points.

The entire unit, written and oral reports, totals 100 pts.

INTERNATIONAL BUSINESS PROJECT

CONTRIBUTOR:
Sue Walter
Loveland High School
Loveland, CO 80538

Objectives:

- The student will develop and present business-related research on a given country.

Procedures:

- Prepare students with the background to be able to use the resources needed to complete the project.
- Distribute and discuss the handouts related to the INTERNATIONAL BUSINESS PROJECT, including the grading sheets.

Materials needed:

- Handouts relating to the INTERNATIONAL BUSINESS PROJECT.
- Word processing software

Additional Comments:

- This project has been used successfully in a Principles of Management class.
- This project should be completed toward the end of the term when students are familiar with the terminology and meaning of specific business terms and procedures covered in the project.

INTERNATIONAL BUSINESS PROJECT–PROCEDURES

1. Identify which country you will research for making a move into that market for your company.

2. Use the WRITTEN REPORT GRADING SHEET as your guideline to completing the written report for the country you have chosen.

3. After you have studied the country and prepared your written report, decide which product or services you believe would succeed in your country. Use the background you have gained from your research to prepare an oral report containing the following points. Use the oral presentation grading sheet as your guideline to preparing your report.

    A. Describe what product or service your company intends to market in the country.

    B. Confirm what type of involvement your company will have in that foreign market.

    C. Detail how your company intends to staff your operations.

    D. Detail where your company's operations will be located.

    E. Describe how you will evaluate the performance of your company in the foreign market by listing three company goals.

Name ______________________________

Country ______________________________

INTERNATIONAL BUSINESS PROJECT– WRITTEN REPORT GRADING SHEET

		Points Possible	Your Score
1.	Cover Letter to Board of Directors (Including Product Identification)	10	_____
2.	History of Country	10	_____
3.	Climate/Geography of Country	10	_____
4.	Natural Resources	10	_____
5.	Transportation/Ease of Shipping	10	_____
6.	Culture/Language/Demographics of Population (age, income, education, etc.)	10	_____
7.	Labor Force and Current Wage Scale	10	_____
8.	Economy (Capitalistic, Socialistic, Communistic)	10	_____
9.	Political Climate/Government Structure	10	_____
10.	Currency/Foreign Exchange Rate	10	_____
11.	Trade Barriers	10	_____
12.	Balance of Trade-Major Imports/Exports	10	_____
13.	Major Business in Country and Competitors	10	_____
14.	Licensing Agreements/Laws	10	_____
15.	Holidays	10	_____
16.	Currency Exchange/Buying Power/Average Income	10	_____
17.	Religious and Social Customs	10	_____
18.	Business and Social Protocol	10	_____
19.	Business Attire	10	_____
20.	Eating Habits/Food	10	_____
21.	Educational Facilities	10	_____
22.	Military Presence/U.S. or Otherwise	10	_____
23.	Written report: spelling, grammar, visually pleasing, professionalism	30	_____
		TOTAL 250	_____
		GRADE	_____

Comments: ____

____

____

Name ______________________

Country ______________________

INTERNATIONAL BUSINESS PROJECT–ORAL PRESENTATION GRADING SHEET

		Possible Points	Your Points
1.	Purpose clearly stated	10	____
2.	Topic adequately developed	10	____
3.	Logical sequence of ideas	10	____
4.	Voice quality	10	____
5.	Eye contact	10	____
6.	Visual aids (graphs, charts, posters, handouts)	10	____
7.	Extent to which speech was sincere, interesting, understandable, creative and CONVINCING	20	____
8.	Appropriate length (15 minutes)	10	____
9.	Closure of presentation	10	____
	Total/Grade	100	____

Comments:

____

____

____

____

Computer Literacy/ Computer Awareness/ Introduction to Computers

Category 11

TESTING FOR DOS SKILLS

CONTRIBUTOR
Kevin L. Cummings
Davis Applied Technology Center
Kaysville, Utah 80437

Objective:

- The student will demonstrate knowledge of MS-DOS by completing a series of directed exercises and recording information displayed on the PC screen.

Procedures:

- Give students a diskette containing MS-DOS, a blank diskette, and a test paper. (A sample test is provided as a guide for instructors.)
- Have students record their answers on an answer form.

Materials needed:

- MS-DOS diskettes and blank diskettes.
- Test papers and answer sheets.

Comments:

- Although traditional pencil and paper tests can provide some measure of a student's ability to recall DOS commands, they do not provide a clear picture of the student's ability to apply those commands. Due to the nature of DOS, it is difficult to create a production test of the sort that is common in typing and word processing courses. By using questions similar to those in this exercise, a skills test can be administered which accurately reflects a student's ability to perform DOS operations while allowing the instructor the freedom to grade a paper-based test.
- Additionally, this kind of test can be used to diagnose a student's areas of weakness. For example, question number eleven on the sample test can be particularly revealing. Students who do not understand the meaning of the phrase "boot disk" will probably use the command FORMAT B: rather than FORMAT B:/S. Naturally the amount of free space on their disks will be greater than expected. This procedure allows the instructor to pin-point the areas in which a student is having difficulty.

- This sample test is intended only to suggest questions. Should you choose to use this test in your classes, you must first prepare a test diskette and then create your own answer key. The **MS-DOS TEST** diskette is a standard MS-DOS diskette which has three new ASCII files. These files are called **TRASH.TAT, LETTER.TAT, and SHORT.TAT**. Once you have created these files, complete the questions above and write down the answers which apply to your particular version of DOS.

Solution:

1. 38
2. 57344
3. 5
4. 27
5. 23612
6. 02-06-89
7. 10:03 am
8. SHORT.TAT
9. 12:00 am
10. COMMAND, APPEND ASSIGN, MORE, SYS
11. 292928
12. 3
13. TRASH,LETTER, SHORT
14. 3
15. 249856
16.
17. 250880
18. 2
19. 1
20. Answers will vary depending on the contents of the file.

INTRODUCTION TO MS-DOS TEST

Obtain a copy of the diskette labeled: **MS-DOS-TEST**. Also, to complete this test, you will need to obtain a blank disk. You may use your own or you may use one from the classroom supply. You will use these two disks to help you answer the following questions.

1) Boot the PC using the **MS-DOS TEST**. How many files are on this diskette? ______

2) How many bytes of space are left on this diskette? ______

3) Use the DIR command and a wild card to help you answer this question. How many files on the **MS-DOS TEXT** disk have the extension. **COM**? ______

4) How many files on the disk have the extension. **EXE**? ______

5) How many bytes of space are taken up by the file called **COMMAND.COM**? ______

6) On what date was the file called **LETTER.TAT** CREATED? ______

7) At what time was the file called **SHORT.TAT** created? ______

8) What is the name of the newest file on the diskette? ______

9) Many of the files on the disk show the same time of creation. What time do they show? ______

10) What are the names of the **.COM** files you found in question 3?____________________

11) Use a **FORMAT** command to prepare the blank disk to be used as a boot disk. How many bytes of free space are on this disk? ______

12) Use the **COPY** command and a wild card to copy all of the files with the **.TAT** extension from the **MS-DOS TEXT** disk. How many files did you copy? ______

13) What are the names of the files you copied? ____________________

14) The rest of the questions will deal with the diskette onto which you just copied the files. Switch to that drive now. How many files are on this disk? ______

15) How many bytes of space are left on this disk? ______

16) Change the name of the file **LETTER.TAT** to **TEMP.TAT**. How many bytes of free space are left on the disk now? ______

17) Delete the file called **TRASH.TAT**. How many bytes of space are left on the disk? ______

18) How many of the files on this disk have the extension? **TAT**? ______

19) How many of the files on this disk have the extension. **COM**? ______

20) Make a print-out of the file called **TEMP.TAT**. ______

You have now completed the test. Take this text, the answer sheet, and the print-out you made to your instructor to be graded. ______

TUTOR DOS

CONTRIBUTOR:
Kevin L Cummings
Davis Applied Technology Center
Kaysville, UT 80437

Objectives:

- The student will: be introduced to MS-DOS concepts and operations by using a self-paced, disk-based tutorial program.

Procedures:

- Follow the procedures listed in the **Tutor DOS** documentation to install the program on student computers and provide students with instructions for starting the program.

Materials needed:

- **Tutor DOS** program diskettes. (**Tutor DOS** is a shareware program.)

Comments:

- By state mandate, the courses I teach must be open-entry/open-exit and self-paced. Since I was dissatisfied with the commercial MS-DOS tutorials available to me, I developed the **Tutor DOS** software. The licensing agreement explicitly states that the software may be freely used by public schools and training facilities.

- **Tutor DOS** is divided into twenty-one lessons. Each lesson ends with a quiz. These quizzes allow the user to judge his or her own level of mastery of the material. At the end of the course, **Tutor DOS** administers a thirty-question multiple-choice test. Students who score better than 80% on the test are rewarded with a customized certificate.

- To reduce the level of student frustration, **Tutor DOS** is programmed to accept a variety of answers to each of its questions. **Tutor DOS** explains difficult concepts in clear, easy-to-understand language such as that seen on the sample screens.

- **Tutor DOS** was written to run on any PC with 256K or more of RAM memory and any graphics card/monitor combination.

- **Tutor DOS** is included in the PC-SIG library and is available via Genie.

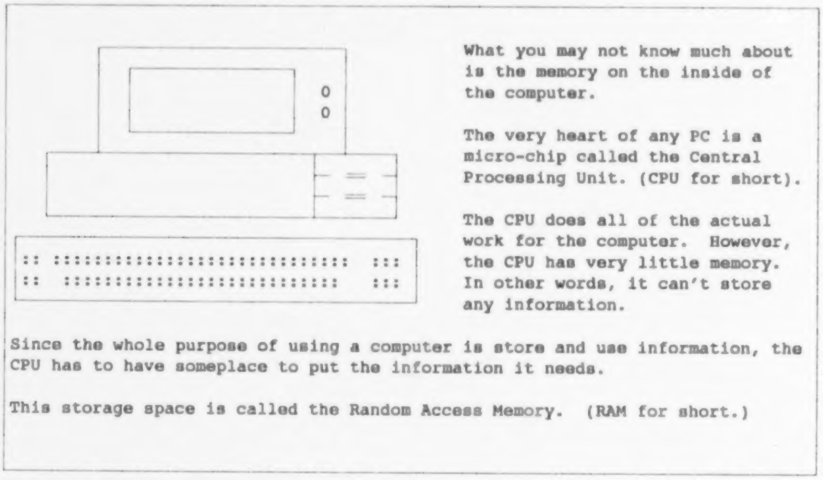
- Copies may be obtained from the following shareware/public domain software distributors and are available on many local bulletin board systems.

Public Brand Software
P.O. Box 51315
Indianapolis, IN 46151
1-800-426-3475

Reasonable Solutions
2101 West Main Street
Medford, OR 97501
1-800-987-3475

Sizzleware Shareware Library
P.O. Box 6429
Lake Charles, LA 70606
1-800-356-2697

- **Sample instruction:**



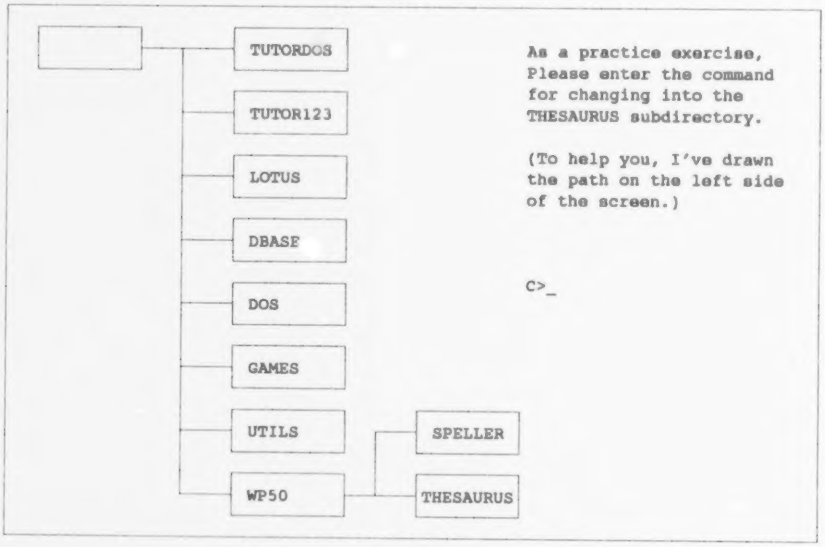
What you may not know much about is the memory on the inside of the computer.

The very heart of any PC is a micro-chip called the Central Processing Unit. (CPU for short).

The CPU does all of the actual work for the computer. However, the CPU has very little memory. In other words, it can't store any information.

Since the whole purpose of using a computer is store and use information, the CPU has to have someplace to put the information it needs.

This storage space is called the Random Access Memory. (RAM for short.)



As a practice exercise, Please enter the command for changing into the THESAURUS subdirectory.

(To help you, I've drawn the path on the left side of the screen.)

```
C>_
```

SYSTEMS ANALYSIS

CONTRIBUTOR:
Tracy Dearinger
Sheridan College
Sheridan, WY 82801

Objectives:

- The student will work on a team to perform a systems analysis.
- The students will determine any problems or opportunities that exist in a current computer system of a business.
- The students will analyze a computer system in a local business and recommend solutions, if appropriate, to computer problems.

Procedures:

- Make prior arrangements with a company to study a computer-related problem.
- Visit a company as a class and have the owner/manager explain the current situation.
- Divide assignments among team members. (See lab assignment sheet.)
- Talk with local computer vendors about the available technology and costs.
- Review formal report formats and procedures.
- Complete formal reports.

Materials/Resources:

- Computers and appropriate software for complete reports.
- A company willing to work with you and your class.

Comments:

- Finding a small company that is willing to work with you and your class is often easy. After the formal reports are handed in and graded (see grading sheet), copies are sent to the company for review. If the company pursues the project, the business has a better idea of what questions to ask and what approaches would be feasible. This exercise is completed toward the end of the semester so students have the proper background.

Editor's Comment:

- Students need the appropriate background to complete this project. Students should have knowledge of the software needed to complete the report as well as a knowledge of report formats and procedures. Students also need a background in computer systems and equipment to complete the assignment. This exercise seems most appropriate at the post-secondary level.

SYSTEMS ANALYSIS LAB ASSIGNMENT

You will work in groups of four to five people. The class will visit (name of company) on (date). From this visit, the group will turn the following by assignment (date).

Points Assignment

10 1. Define the problem. (Clearly state the exact problem.)

10 2. Outline the project.

- a. determine the objectives
- b. determine the benefits
- c. identify what areas will be affected
- d. list the available alternative

10 3. Complete a feasibility study.

- a. what technology is available
- b. will it be accepted and used by the people
- c. will the benefits outweigh the costs

10 4. Prepare a logical design.

- a. determine the systems requirements (logical design)
- b. describe the data that the systems will use and manipulate
- c. create a data flow diagram
- d. create the input/output layout forms
- e. determine how the user can get the system to perform for him/her

10 5. Create a formal report including the information identified in 1 - 4 above. In addition:

- a. Make recommendations for the company and include the details which helped form your recommendations. Justify your reasoning.
- b. Identify person(s) responsible for each portion of the report on the SYSTEMS ANALYSIS EVALUATION form. Include the form as the last appendix in your report. Each person will hand in a time line indicating the time spent and the activities he/she performed for the entire project. Each person may earn 50 points. Each person in the group will receive the same number of points.

INTRODUCTION TO INFORMATION SYSTEMS

SYSTEMS ANALYSIS

Company Name____

Address____

Group Members:	Responsibilities:
____________	____________________
____________	____________________
____________	____________________
____________	____________________

- -

_____ Define Problem (10 points)

_____ Define Project (10 points)

_____ Complete a Feasibility Study (10 points)

_____ Prepare a Logical Design (10 points)

_____ Prepare a Formal Report with Logical Recommendations (10 points)

Comments:____

____

____

CURRENT COMPUTER HAPPENING

CONTRIBUTOR:
Jo H. Mathews
DeSoto County Vo-Tech
Southaven, MS 38671

Objectives:

- The student will identify and use periodical literature for computer research and reports which emphasize legal and ethical implications of computer uses.
- The student will illustrate a simple usage of word processing and will store/retrieve information in a data base.

Procedures:

- Explain early in the term that an article will be due every two weeks until students have collected at least 10---three legal and three relating to computer ethics.
- Distribute handout: **COMPUTER BIBLIOGRAPHY INFORMATION**. Record due dates for articles on the handout. Place handout in a folder. Students are to complete the forms and place copies of their articles in their folder on or before the due date.
- Have students give a short oral report on their articles on due dates and file the articles in their folders. Complete the form.
- Have students write a paper using the articles they collected. Provide guidelines for writing and keying the paper.

Materials needed:

- Handout: **COMPUTER BIBLIOGRAPHY INFORMATION**
- Current newspapers, magazines, folders for articles.
- Any word processing software, and database software.

Comments:

- This project helps students use their computer skills in a practical application that carries over to other classes.
- Later in the year students store this information in a database. It is the student's responsibility to keep up with this form.

COMPUTER BIBLIOGRAPHY INFORMATION

Student ______________________ Class ____________________

#	DUE DATE	AUTHOR	TITLE OF ARTICLE	NAME OF MAGAZINE OR NEWSPAPER	DATE	PAGE
EX	8/15	Mason, Leslie J.	10 Good Rules for Basic Programming	Computer News	11/31/90	6
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

DEVELOPING PERSONAL COMMAND MANUALS

CONTRIBUTOR:
Jarrold C. Rupe
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Roswell, NM 88202-6000

Objectives:

- The student will create a personal manual of commands for application software packages.

Procedures:

- Give the students a list of the application software commands to research.
- Explain to students that the manuals are for their use. They may want to include more commands to help them with other projects. Also, you may want to give additional commands as you complete specific project.
- Have the students list each command name and identify each command function.
- Have the student use, if possible, a software package that will allow the lists to be alphabetized.
- Explain the resources available to students at your school, such as manuals.
- Provide projects throughout the course that will allow students to use their manuals.

Materials needed:

- Application software manual for software in use.
- Handouts, such as: **BASIC MS-DOS COMMANDS.**

Solution:

BASIC MS-DOS COMMANDS

Date: Command Com an Internal Command. This command is important for personal use, as it allows you to change or set the date. This also allows you to data a file so that you could replace it by using the date it was filed.

Time: Command Com an Internal Command. This command is used to set the time by providing a "time stand" so that you have an accurate record of when the document was created or changed.

Format: Format Command or External Command. This command allows you to erase what was on the disk before and prepares the disk to receive the information you want to put on the disk.

Ver. Command Com an Internal Command. By using this command you will know what version of DOS you are using. You need to know this so that you are using compatible software.

Dir. Command Com an Internal Command. This command pulls up the directories of the disk you are using.

Dir/W/P: Command Com an Internal Command. Use this to call up the directory by page and width. This gives you more time to look at the directory.

Type: Command Com an Internal Command. Use this command to see what a file contains.

Copy: Command Com an Internal Command. This command is use to copy files.

Diskcopy: External Command. By using this command you are able to simultaneously format and copy all files from one disk to another.

DiskComp: External Command. This command allows you to compare the disk you have copied to the disk you have copied from.

Chkdsk: Chkdsk Com an External Command. Use this to check the space available on the disk and to check for bad of faulty files.

Rename or Ren: Command Com an Internal Command. With this you are able to rename or change the name of a file. Important for security or personal reasons.

Del: Command Com an Internal Command. This erases files, which is important when you no longer need the files.

Erase: Command Com an Internal Command. This erases files, which is important when you no longer need the files.

Mkdir or Md: Command Com an Internal Command. Using this allows you to create new directories.

BASIC MS-DOS COMMANDS

Instructions: Use a MS-DOS Software Manual to research the command days listed below. For each command, identify if it is an internal or external command. Define the command function.

Date:

Time:

Format:

Ver:

Dir:

Dir/W/P:

Type:

Copy:

Diskcopy:

DiskComp:

Chkdsk:

Rename or Ren:

Del:

Erase:

Mkdir or Md:

COMPUTER SCRAPBOOK

CONTRIBUTOR:
Pattie M. Wheeler
Westlake High School
Atlanta, GA 30331

Objective:

- The students will illustrate and define computer-related items that are given on the assignment sheet.

Terminology:

- Define only those terms that may be new to students or that may cause students difficulty in understanding the enrichment idea. (Many ideas will not need this.)

Procedures:

- Distribute the handout: **COMPUTER SCRAPBOOK GUIDELINES.** Discuss the requirements and the items on the sheet. Throughout the course, take time to discuss items in more detail--as they come up in text or class discussion.

- Arrange sample scrapbooks for students to examine. Keep old magazines and catalogs in the classroom so students can come before or after school to find items they might not be able to find on their own. The items that have an asterisk beside them are computer activities which are created in class.

Materials Needed:

- Unlined paper, such as typing paper or construction paper, glue, string, glitter.

- Handout: **COMPUTER SCRAPBOOK GUIDELINES**

Comments:

For those students who do not test well, this is a way to excel. Allow class time to work on the scrapbooks. Remind students that it is their responsibility to remember project deadlines. Add several checkpoints so the students will not wait until the last minute. The more creative the scrapbook, the better the grade.

If students have acquired the necessary skills, have them print the heading, labels, and/or explanations for the scrapbook. If they have the skills, consider having them compose, edit, and print the essay via the computer.

COMPUTER SCRAPBOOK GUIDELINES

Directions: Prepare a scrapbook containing as many of the following computer-related items as you can find. Cross each off the list as you find it. Label each item in your scrapbook.

Pictures:

_____ 1. a home computer
_____ 2. a laptop/portable computer
_____ 3. an advertisement for a computer
_____ 4. a computerized toy
_____ 5. a computerized learning aid (CAI)
_____ 6. an industrial or home robot--**NOT A TOY ROBOT**
_____ 7. a wrist watch calculator or digital data bank watch
_____ 8. a punch card
_____ 9. a flowchart
_____ 10. a circuit board or individual chip
_____ 11. computer graphics (computer-generated picture, drawing, or chart)
_____ 12. a mouse (input device)
_____ 13. facsimile (FAX) machine or phone
_____ 14. storage medium: 5 1/4" floppy disk
_____ 15. storage medium: 3 1/2' floppy disk
_____ 16. input devices (need 2 other than mouse to receive credit)
_____ 17. output devices (need 2 to receive credit)
_____ 18. a modem (telecommunications)
_____ 19. children/young adult using a microcomputer
_____ 20. a dedicated computer (microwave, word processor, digital clock, answering machine, etc.)
_____ 21. commercial software
_____ 22. a cartoon drawing of computer
_____ 23. FREEBIE!!! (a computer-related picture of your choice)

Computer-generated Items:

_____ 24. cover to scrapbook (Printmaster)*
_____ 25. a photograph (snapshot: instamatic picture is unacceptable)
_____ 26. computer generated receipt
_____ 27. a bill
_____ 28. an Automatic Teller Machine (ATM) receipt
_____ 29. computer slang* (MECC worksheet)+
_____ 30. list of 10 computer manufacturers* (MECC worksheet)+
_____ 31. timeline of computer history*
_____ 32. summary of the four computer generations*
_____ 33. computer words (A-Z worksheet)* (MECC)+
_____ 34. binary number system code sheet
_____ 35. short essay: How your life will be computerized in the year 2030*

*These items will be completed in class.

+ Editor's note: If you do not have access to MECC materials, you may wish to develop a short worksheet for this item.

OTHER–FIND THE ACTUAL ITEM:

_____ 36. FREEBIE!!! (a computer-generated item of your choice)
_____ 37. UPC bar code: Input medium
_____ 38. input medium: Rich's price tag or MARTA card (magnetic tape)
_____ 39. input medium: Macy's or Sears price tag (OCR)
_____ 40. input medium: Check or deposit slip (MUST HAVE MICR NUMBERS)
_____ 41. a computer-related news article

WANT ADS FROM THE NEWSPAPER

_____ 42. computer dating service (look in Personals section of paper)
_____ 43. computer operator
_____ 44. computer programmer
_____ 45. systems/programmer analyst
_____ 46. computer technician (repair)
_____ 47. computer sales person
_____ 48. any other computer-related job

All scrapbooks must be original, creative, and neat in appearance. Divide your scrapbook into the four sections listed above. All items must be clearly labeled to get credit--any item not labeled will not be graded. Label your items EXACTLY as they are listed on this handout using both the number of the item and the name. Example: #37–UPC bar code. Items must be placed in the scrapbook in the order they appear on this handout.

Grading scale:

48 items = 100/A
47 items = 99/A
46 items = 98/A
45 items = 96/A
44 items = 95/A
43 items = 94/A
42 items = 93/A
41 items = 92/A
40 items = 91/B
39 items = 89/B
38 items = 87/B
37 items = 85/B
36 items = 83/B
35 items = 82/C
34 items = 80/C
33 items = 79/C
32 items = 78/C
31 items = 77/C
30 items = 76/C
29 items = 75/C
28 items = 74/C
27 items = 73/D
26 items = 72/D
25 items = 71/D
24 items = 70/D
under 24 items = 65F

DUE DATE: You may turn in your scrapbook any day Monday-Friday during the week it is due. No scrapbooks will be accepted after Friday of the due week. If you had an EXCUSED emergency on that day, AND you return with a note from your parent with a number to call and confirm your absence, you MUST turn your scrapbook in on the FIRST day you are back in class. Failure to turn in a scrapbook can lower your final grade as much as 20 points.

CHECK POINTS:
(Due Dates)

______: Total of 10 items from list worth 10 points each. (daily grade)

______: Total of 20 items from list worth 5 points each. (daily grade)

______: Total of 30 items from list worth 3.3 points each. (daily grade)

______: Final scrapbook due.

***UP TO 5 BONUS POINTS MAY BE ADDED TO FINAL GRADE FOR NEATNESS.**

***UP TO 5 BONUS POINTS WILL BE ADDED FOR TURNING IN BEFORE FRIDAY.**

Microcomputer Applications/ Information Processing

Category 12

INTRODUCTION TO WINDOWS: A SUGGESTED OUTLINE

CONTRIBUTOR:
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I. USING THE POINTER

- A. Pointer types.
- B. Using the pointer.
  - 1. Navigating.
    - a. Rotating the mouse on the pad.
    - b. Tapping the directional keys on the keyboard.
  - 2. Selecting.
    - a. Clicking once with the left mouse button.
    - b. Clicking twice rapidly with the left mouse button.
    - c. Dragging by holding down on the left mouse button and moving the mouse without releasing the button.

II. WORKING WITH ICONS

- A. Activating an icon: Double click on an icon.
- B. Click on an icon to select it; select **File**; select **Open**.

III. WORKING WITH A WINDOW

- A. Navigating in a Window.
  - 1. Use the horizontal scroll bar to shift the work area to the right or left.
  - 2. Use the vertical scroll bar to shift the work area up or down.
- B. Moving a Window.
  - 1. Position the pointer on the title bar at the top of the window.
  - 2. Drag the window to the new location.
  - 3. Release the mouse button.
- C. Resizing a Window.
  - 1. Move the pointer to the frame edge until it becomes a double-headed arrow.
  - 2. Hold the left mouse button down and drag the frame.
  - 3. Release the mouse button when the frame is the desired size.
- D. Using the Minimize and Maximize boxes.
  - 1. Clicking the Minimize box (the box with the down arrow) substitutes an icon for the window and moves the icon to the bottom of the desktop.
  - 2. Clicking on the Maximize box (the box with the up arrow) enlarges the window to fill the entire desktop.
  - 3. After a window is maximized, the Restore box (the box with a double arrow) appears. This box restores the window to its previous size.

E. Closing vs Exiting.
  1. The Close command on the Control menu removes an application from the desktop, without removing the application from the computer's memory.
  2. The Exit command on the File menu closes the application files and data files and clears them from the computer's memory.

IV. USING THE MENU BAR

A. Issuing commands with the mouse.
  1. Click on the desired menu.
  2. Click on the command.

B. Issuing commands from the keyboard.
  1. Hold down the **ALT** key and tap the first letter of the menu name.
  2. Key the underlined letter in the command name to select the command; or move the arrow key to highlight the command, then tap return.

V. WORKING WITH DIALOG BOXES

A. Three ways to move to different items in a dialogue box are:
  1. Click on the desired dialogue box item.
  2. Tap **Tab** to move forward or **Shift Tab** to move backward.
  3. Hold down the **Alt** key and tap the underlined character in the dialogue box item name.

B. Check boxes and radio buttons are selected and deselected by clicking in the box or button.

C. List boxes let you select from a large list of items, scrolling up or down to see the entire list.

D. Text boxes let you enter the required text in the box; click **OK** to select.

INTEGRATING MICROCOMPUTER SKILLS INTO SCIENCE

CONTRIBUTOR:
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Objectives: Note: (This activity consists of three interrelated exercises.)

Exercise 1: Develop a database

- The student will organize astronomical data into meaningful form.

Exercise 2: Measure Objects Using Spreadsheets

- The student will measure astronomical objects and formulate an astronomical hypothesis using an electronic spreadsheet.

- The student will apply information from a spreadsheet to a database and will take information from the database to use on the spreadsheet.

Exercise 3: Plot Data on Graphs

- The student will plot data on graphs and other displays.

- The student will use information from a previously prepared spreadsheet to determine a planet's distance from the sun.

Procedures:

Exercise 1:

- Discuss with students how to create a database and how to sort using a database. Students should be aware that when setting up the database, not all information will be available.

- Direct students to set up the database as described in STUDENT WORKSHEET 1. Have students sort the database as described and produce the averages. Using the database, students should answer Question D on Worksheet 1.

- Have students print the database, the sorted file, and the averages.

- These exercises provide a means of integrating business skills into academic course material.

Exercise 2:

- Have students read WORKSHEET 2 and create a spreadsheet. The format of the spreadsheet will vary. On Question A, the student should calculate the average distance from the sun in kilometers. In Question B, the student should calculate the number of Earth years it takes for each planet to revolve around the sun. The student should multiply the number of Earth years times 365 to determine the number of Earth days. Question C calls for students to draw conclusions from the data.

- Discuss with students how to convert miles to kilometers on a spreadsheet. Given the formula, P^2/D^3 = 2.985 X 10^-25, how might this be set up on a spreadsheet? For example: P^2 =(2.985 * 10^ -25 * D^3). Determine the function on the spreadsheet being used to find the square root of a number. Have a column to calculate the square root of P.

- Have students set up a spreadsheet to solve Question's A and B on Worksheet 2. Have students use the data from the spreadsheet to answer Question C. Students can write their answers on the spreadsheet.

Exercise 3:

- Have students determine the order of planets from the sun by noting the average distance from the sun in the previous spreadsheet. Students should make a column for gravity and a column for each of the weight given. Have students place the answers to Question D on the spreadsheet.

- Discuss with students how to convert percentages to decimal and how to format a spreadsheet to 2 decimal places. Review with students how to perform bar charts and line charts using the spreadsheet.

- Have students set up the spreadsheet as described on STUDENT WORKSHEET 3. After the spreadsheet is set up, students should produce the graphs as described.

- Evaluate students on the accuracy of the graph and the answers to the questions in the last paragraph of the worksheet.

Materials needed:

- Handouts: **STUDENT WORKSHEETS 1, 2, 3.**

- Software: database, spreadsheet, graphic, word processing, or an integrated software package.

Comments:

- These exercises provide a means of integrating business skills into academic course material.

Solutions:

- Exercise 1 (Worksheet 1):·

  B. Planet sort by closest point to the sun:
  Planets should be sorted in the following order with the closest planet listed first: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto.

  C. Average diameter of the planets: 27,738.55.
  Average gravity of the planets: 1.0.

  D. Students should conclude that the shape of the orbit of planets is elliptical. The aspect (shape) of the ellipse can be determined by the difference between the shortest distance from the sun and the greatest distance from the sun. Venus is the closest planet to Earth and Pluto is the farthest.

- Exercise 2 (Worksheet 2):

  A. An example of how the spreadsheet might appear:

	Closest in Miles	Greatest in Miles	Average Miles	Average Kilometers
Mercury	28600000	43000000	35800000	57612940
Venus	66800000	67700000	67250000	1.1E+08
Earth	91400000	94500000	92950000	1.5E+08
Mars	1.3E+08	1.5E+08	1.4E+08	2.3E+08
Jupiter	4.6E+08	5.1E+08	4.8E+08	7.8E+08
Saturn	8.4E+08	9.3E+08	8.9E+08	1.4E+09
Uranus	1.7E+09	1.9E+09	1.8E+09	2.9E+09
Neptune	2.8E+-0	2.8E+09	2.8E+09	4.5E+09
Pluto	2.7E+09	4.6E+09	3.7E+09	5.9E+09

  B. Length of year in Earth days.

	22.985	10^ -25	Avg dist to sun	Avg ^3	P^2	Earth Years	Earth Days
Mercury	2.985	1.0E-25	57612940	1.9E+23	0.057082	0.2	87.21
Venus	2.985	1.0E-25	1.1E+08	1.3E+24	0.378383	0.6	224.52
Earth	2.985	1.0E-25	1.5E+08	3.3E+24	0.999087	1.0	364.83
Mars	2.985	1.0E-25	2.3E+08	1.2E+25	3.539687	1.9	686.71
Jupiter	2.985	1.0E-25	7.8E+08	4.7E+26	140.6192	11.9	4328.28
Saturn	2.985	1.0E-25	1.4E+09	2.9E+28	862.3532	29.4	10718.54
Uranus	2.985	1.0E-25	2.9E+09	2.4E+28	7016.416	83.8	30573.88
Neptune	2.985	1.0E-25	4.5E+09	9.0E+28	26946.35	164.2	59916.01
Pluto	2.985	1.0E-25	5.9E+09	2.0E+29	60975.62	246.9	90130.33

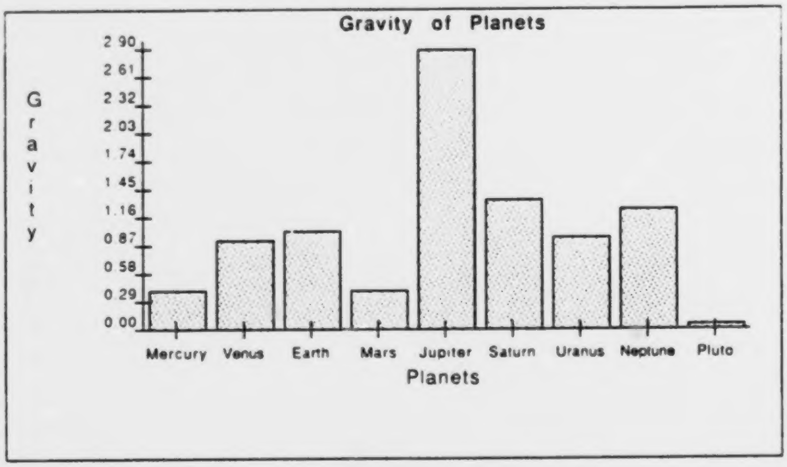
  C. *Help students draw conclusions from the data to answer the questions.*

- **Exercise 3** (Worksheet 3):

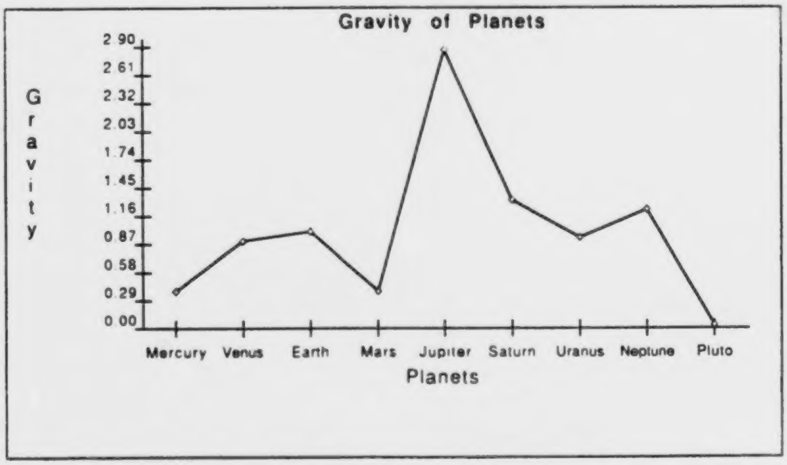
A. Spreadsheet:

	Gravity	5# obj	10# obj	20# obj	100# obj
Mercury	0.38	1.90	3.80	7.60	38.00
Venus	0.90	4.50	9.00	18.00	90.00
Earth	1.00	5.00	10.00	20.00	100.00
Mars	0.38	1.90	3.80	7.60	38.00
Jupiter	2.87	4.35	28.70	57.40	287.00
Saturn	1.32	6.60	13.20	26.40	132.00
Uranus	0.93	4.65	9.30	18.60	93.00
Neptune	1.23	6.15	12.30	24.60	123.00
Pluto	0.03	0.15	0.30	0.60	3.00

B. Sample bar graph:



C. Sample line graph:



D. Mars would require 38% as much thrust or 15,200 lbs. With 50,000 lbs of thrust on Earth, a space craft would not be able to lift off Jupiter or Neptune.

STUDENT WORKSHEET 1
Developing a Database

You have received a part-time job in the science department of a university. Dr. Baxter, an astrology professor, has asked you to set up a database with information on the planets. Dr. Baxter wants the following information in the database: Planet name, shortest distance from the sun, greatest distance from the sun, average distance to the sun in kilometers, length of the year in earth days, diameter of the planet, mass of each planet in relation to earth, and density. Although Dr. Baxter does not have all the information to go into the database, you need to set up all the fields. The field length of the year in earth days can be up to 5 digits. The field for mass should be capable of handling 999.9999. Enter information currently available, the other information can be filled in later.

	A	B	C	D	E
Earth	91,400,000	94,500,000	12,756	5.520	100%
Jupiter	460,000,000	507,000,000	88,700	1.310	287%
Mars	128,000,000	154,900,000	4,200	3.950	38%
Mercury	28,600,000	43,000,000	3,031	5.440	38%
Neptune	2,754,000,000	2,821,000,000	30,200	1.660	123%
Pluto	2,748,000,000	4,571,000,000	2,900	1.000	3%
Saturn	828,000,000	932,000,000	74,600	0.704	132%
Uranus	1,700,000,000	1,850,000,000	31,570	1.210	93%
Venus	66,800,000	67,700,000	7,520	5.270	90%

A - Closest point to the sun
B - Longest distance from the sun
C - Diameter of the planet
D - Density (in relation to earth)
E - Gravity (in relation to earth)

A. Plan the structure of the database. Set up the structure of the database and enter the information into the database.

B. Sort the planets by the closest point to the sun.

C. Determine the average diameter of the planets and determine the average gravity of the planets.

D. What can you conclude about the shape of the orbit of various planets by the data given? Which planet do you think is closest to earth? Which planet is the most distant from earth?

STUDENT WORKSHEET 2
Measuring Objects Using Spreadsheets

A. Dr. Baxter needs some calculations made on data concerning planets. Dr. Baxter would like to know the average distance each planet is from the sun in kilometers to enter into the planet database. To determine kilometers, multiply miles by 1.6093 to get kilometers. An example of how the spreadsheet might appear:

	Closest in Miles	Greatest Miles	Average Miles	Average Kilometers
Mercury	28600000	430000000	35800000	57612940

B. Determine the length of the year in Earth days for each planet. According to Kepler's law of planetary motion, the formula for calculating the number of Earth years it takes a planet to make one revolution around the sun is

$$P^2/D^3 = 2.985 \times 10^{-25}$$

where P is the number of earth years for one revolution around the sun and D is the planet's average distance from the sun in kilometers. (See column heads below as an example.

	2.985	10 ^-25	Avg dist to sun	Avg ^3	P^2	Earth Years	Earth Days
Mercury	2.985	1.0E-25	57612940	1.9E+23	0.057082	0.2	87.21
Venus	2.985	1.0E-25	1.1E+08	1.3E+23	0.378383	0.6	224.52

(Enter the other planets and copy the formulas.)

C. How would you define one year? Is there a relationship between a planet's distance from the sun and the length of its year in Earth days? How would you explain this relationship? What planet would you believe approaches the closest to the Earth? What planet would you believe we know the least about? Why?

D. Enter the average distance to the sun and length of year in days into the database.

Student Worksheet 3
Plotting Data on Graphs

A. The gravity of other planets is given in its relation to the gravity of Earth. For example, the gravity of Mercury is 38% of the gravity of Earth. Set up a spreadsheet which lists the gravity of each planet in relation to Earth. Enter the gravity of Earth as 100%. Scientists are not too sure of the gravity of Pluto, but it is usually given as 3% of the gravity of Earth. When setting up the spreadsheet, place the planets in order by distance from the sun. The gravity should be entered as a decimal to two places.

If an object weight 5 pounds on earth, how much would it weigh on the other planets? Use the spreadsheet to determine how much 5-, 10-, 20-, and 100-pound objects would weight on each of the planets. Format answers to two decimal places.

Your spreadsheet may be set up:

```
                Gravity        5# obj        10# obj        20# obj    100# obj
Mercury         0.38           1.90          3.80           7.60       38.00
```

B. Set up a bar graph representing the gravity of each planet.

C. Set up a line graph representing the gravity of each planet.

D. If a space craft required 40,000 pounds of thrust to lift off Earth, how much thrust would be required to lift off Mars? If the most thrust a space craft could generate was 50,000 pounds on Earth, from which planets would it not be able to lift off?

IMPORTING FILES–LOTUS AND WORDPERFECT

CONTRIBUTOR:
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Objectives:

- The student will learn to import Lotus files into WordPerfect and vice versa.

Procedures:

- Explain to students the need for importing files from one software package to another.

- Reproduce the handouts: **IMPORTING LOTUS WORKSHEET INTO WORDPERFECT** and **IMPORTING WORDPERFECT FILES INTO LOTUS.**

Materials needed:

- Handouts: **IMPORTING LOTUS WORKSHEET INTO WORDPERFECT** and **IMPORTING WORDPERFECT FILES INTO LOTUS.**

- This project was completed using Lotus 1-2-3, version 2.2 and WordPerfect 5.1. This exercise could be adapted to any spreadsheet and word processing packages which allow ASCII files to be imported.

Terminology:

- ASCII--American Standard Code for Information Interchange--standardized microcomputer code for exchanging files between software programs. (often referred to as DOS text)

Solution:

- **IMPORTING WORDPERFECT FILES INTO LOTUS:**

```
FREQUENCY OF USE FOR OFFICE SYSTEMS GRADUATES

Frequency of Use               Number     Percent
 Few times a day                   20          74
 Nearly every day                   6          22
 Less than once a month            14           4
Total                              27

NOTE: This worksheet describes how frequently office systems graduates use microcomputers on their jobs.
Office systems graduates are employed in administrative or management information systems departments in a
wide variety of industries.
```

▪ IMPORTING LOTUS WORKSHEET INTO WORDPERFECT:

MICROCOMPUTER USE BY OFFICE SYSTEMS GRADUATES

By Your Name

Recently, business graduates at a Midwestern university were surveyed concerning their use of microcomputers on their jobs. The graduates responding to the survey are typically in the age group 22-30 and have completed only their bachelor's degrees. They have been working from 1 to 3 years in their current jobs. The graduates are employed in all types of departments in a wide range of industries.

The typical office systems graduate is employed in an administrative or management information systems department. About 70 percent of office systems graduates reported that they were using microcomputers on their jobs.

Office systems graduates tend to use their microcomputers frequently as shown in Table 1. This is expected because the office systems curriculum includes an emphasis on microcomputer use.

FREQUENCY OF USE

Frequency of Use	Number	Percent
Few times a day	20	74
Nearly every day	6	22
Less than once a month	1	4
Total	27	

A majority of the office systems graduates reported that they have sole use of a microcomputer, while a few share a microcomputer with others in their departments.

IMPORTING LOTUS WORKSHEET INTO WORDPERFECT

1. **Create the following text file in WordPerfect 5.1. Save the file as WPTEXT.DOC. Single space the text. Indent the paragraphs. Center the title in all caps. On a line below the title, insert a "By line" with your name.**

MICROCOMPUTER USE BY OFFICE SYSTEMS GRADUATES

By Your Name

Recently, business graduates at a midwestern university were surveyed concerning their use of microcomputers on their jobs. The graduates responding to the survey are typically in the age group 22-30 and have completed only their bachelor's degrees. They have been working from 1 to 3 years in their current jobs. The graduates are employed in all types of departments in a wide range of industries.

The typical office systems graduate is employed in an administrative or management information systems department. About 70 percent of office systems graduates reported that they were using microcomputers on their jobs.

Office systems graduates tend to use their microcomputers frequently as shown in Table 1. This is expected because the office systems curriculum includes an emphasis on microcomputer use.

A majority of the office systems graduates reported that they have sole use of a microcomputer, while a few share a microcomputer with others in their departments.

2. **Table 1 will be imported from the worksheet below which you are to create in Lotus 1-2-3.**

The width of Column A is 37; Columns B and C, 8. Place the title in Column B and center the column headings in the cells. Total the number column and use formulas to figure the percentages in the percent column. (Your worksheet will not look exactly like this copy.)

FREQUENCY OF USE

Frequency of Use	Number	Percent
Few times a day	20	74
Nearly every day	6	22
Less than once a month	1	4
Total	27	

3. **Save the worksheet as a worksheet named FREQ.WK1.**

Then save the worksheet as a DOS text (ASCII) file for importing into WordPerfect. Do this by printing the work-sheet to a file (instead of to the printer). It will be saved as a file with a .PRN extension. Name the file FREQ.PRN. Follow these steps:

Select:
    /
    Print
    File (name the file--FREQ.PRN)
    Range (specify range)
    Align
    Go
    Quit

4. Exit Lotus

5. Boot WordPerfect and recall the document, WPTEXT.DOC. Table 1 will be inserted following the third paragraph using the TextIn/Out feature.

6. Place the cursor in the position where you want the worksheet to begin (at the left margin following the third paragraph.

   Make sure that the margins are at least as wide as the worksheet. If they are not, change the margins at the appropriate point in the document.

7. Use TextIn/Out to retrieve the .PRN file, FREQ.PRN. Follow these steps:
   Select:
      Ctrl F5 (TextIn/Out)
      1 Dos Text
      2 Retrieve (CR/LF to [HRt])
      Document to Retrieve: FREQ.PRN (Enter)

8. The spreadsheet is now inserted into the text. Use Reveal Codes and adjust the position of the worksheet if necessary.

9. Save the document as WPTEXT2.DOC. Print the document.

IMPORTING WORDPERFECT FILES INTO LOTUS

1. **Boot WordPerfect and type the following text. This text will be imported into the Lotus worksheet created in the previous activity.**

   Note: This worksheet describes how frequently office systems graduates use microcomputers on their jobs. Office systems graduates are employed in administrative or management information systems departments in a wide variety of industries.

2. **Save the file using the TextIn/Out feature of WP. Name the file using a .PRN extension. Name this file: OFFICE.PRN. Follow these steps:**
   Select
   - **Ctrl F5 (TextIn/Out)**
   - **1 DOS Text**
   - **1 Save**
   - **Document to be saved: (DOS Text) A:\OFFICE.PRN (Return)**

3. **Exit WordPerfect**

4. **Boot Lotus and retrieve the worksheet, FREQ.WK1. Change the width of Column A to 26 characters. Erase the current title. In Column A enter a new title:**
   FREQUENCY OF USE FOR OFFICE SYSTEMS GRADUATES

5. **Place the cursor in the cell in which you wish the DOS text file to be retrieved. In this case, place the cursor in Cell A one blank line below the total line.**

6. **Use the /File Import Command to retrieve the DOS text file. Select Text since the file is text not numbers. Follow these steps:**
   Select:
   - **/**
   - **File**
   - **Import**
   - **Text**
   - **Enter name of file to import: a:\OFFICE.PRN (Return)**

7. **To adjust the text to the same width as the worksheet use the Range Justify command. Place the cursor in the cell in which the text first appears. Follow these steps:**
   Select:
   - **/**
   - **Range**
   - **Justify**
   - **(Enter range width of line you wish the text to fill.)**

8. **Save the file as FREQ2.WK1. Print the final worksheet including the text.**

Word Processing

Category 12A

MURDER, P.C. WROTE

CONTRIBUTOR
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Objectives

- The student will review the procedures for listing files, setting margins, selecting colors.
- The student will be introduced to the concept of artificial intelligence.

Procedures

- Allow approximately 45 minutes to complete the script.
- Follow the instructions on the **ADVANCED PREPARATION** sheet.

Materials needed

- Script handout: **MURDER, P.C. WROTE**
- Data Disk (master prepared by teacher).
- Word Processing Software (Note: Script prepared to use with WordPerfect 5.0 or 5.1).

Comments

- Although the script is designed to be used with WordPerfect 5.0 or 5.1, it can be adapted easily for other word processing programs.
- Murder, P.C. Wrote has been played two ways:

  1. By the entire class: Designate eight students to be the characters in the story. Each student is seated at a computer with a copy of the script and a data disk. As the players read the script, other students follow along. (Note: Everyone in the class can go through the steps on the computer to solve the mystery even though only the eight designated players read the script aloud.
     Advantages: Group skills are developed as each cluster is part of the group. I prefer this method as group responses are more spontaneous and often very creative.

2. By each student individually: Give each student a data disk and a copy of the script to work independently.
   Advantages: The game is played faster and each player must use all the commands for the game.

Solution:

- With File A1, check the margin settings to be certain the first word of the lines will make the following sentence as it does in the paragraph below: **It is my sister who wants all the money before I get 18 then sis will have everything.**

> Rob and I started our programming business.
> It began in October 1987 and is very exciting. Rob
> is a "genius." With all the brains he has and with
> my foresight, I think we can make some money. My
> sister is hot on Rob. What she sees in you-know-
> who is beyond me. She has always been crazy. Rob
> wants to be a sterling scholar. Winning is really
> all he thinks about. I can't believe he can't see
> the potential of combining our skills. With the
> money that we get, we two will be rich and famous.
> Before a large company buys him with high salaries,
> I have to exploit him. I've thought of an idea to
> get him to cheat on the Biology final, Chapters 1-
> 18 by making him think he can't pass without me.
> Then I can get his brains to work for me. Keeping
> sis out of the picture will be a tough job. It
> will be important to hide this from my parents. I
> have to blackmail Rob to sell me the copyright and
> everything about his voice activated program.

ADVANCED PREPARATION

1. Prepare photocopies of the script for the class.

2. Prepare the master data disk containing four files. You may want to prepare enough data disks for each character or for each student, depending on how you set up the game.

3. Prepare name tags for each character. Name tags make it easier for the participants to keep track of who to talk to and what is going on.

4. Make character assignments the day before the game and give students a copy of the paragraph about their characters. Encourage students to come dressed as their characters.

CLASSROOM PREPARATION

Prepare the following items in advance:

1. Have the word processing software available.

2. Preset the colors for the screen for black background and white letters:

   Instructions for WordPerfect 5.1:

   Shift + F1 (Setup)
   Select "2" (Display)
   Select "1" (Colors/Fonts/Attributes)
   Select "1" (Screen Colors

   Make the following selections:

	Foreground	Background
Normal	P	A
Underline	P	A

3. You may wish to have students copy data disks and prepare their computers as part of this exercise.

DATA FILES

Key the following information under the file names as shown. You will have four files:

1. filename: MONEY

Financial Report
December 19__

Rite-Word Financial Report

1991 profits	$67 Thousand
1992 profits	$4.5 Million
1993 profits projected	$5.7 Million
1993 profits projected with Version 2	$12.8 Million

Version 2.0 of Rite-Word
Rite-Word, the world's fastest growing word processor, will soon have a new version. Version 2 will incorporate all the features that made Rite-Word famous and add new features. Version 2 will be the first totally voice activated word processor for public use. A dictionary of 200,000 words will allow data input from voice plus all management commands.

2. filename: BLAKMAIL (Note: You may need to adjust spacing between words to achieve the final solution.) Also, the letters and words not underlined will be displayed as a message.

Rob and I started our programming business. It began in October 1987 and is very exciting. Rob is a "genius." With all the brains he has and with my foresight, I think we can make some money. My sister is hot on Rob. What she sees in you-know-who is beyond me? She has always been crazy. Rob wants to be a sterling scholar. Winning is really all he thinks about. I can't believe he can't see the potential of combining our skills. With the money that we get, we two will be rich and famous. Before a large company buys him with high salaries, I have to exploit him. I've thought of an idea to get him to cheat on the Biology final, Chapters 1-18 by making him think he can't pass without me. Then I can get his brains to work for me. Keeping sis out of the picture will be a tough job. It will be important to hide this from my parents. I have to blackmail Rob to sell me the copyright and everything about his voice activated program.

Editor's note: You will be able to see your underlining if the color settings are:

	Foreground	Background
Normal	P	A
Underline	B	A

3. Filename: AI

Dear Friends:

Artificial Intelligence

For the past two months, I have been consumed with the idea of computers really thinking. I have been working with artificial intelligence–but this is just sets of instructions for a computer to follow. Is there some way to have a computer think?

I have an idea of trying to put my intelligence in the computer. The idea is wild. I think that what I can do is use the electrical systems of the world to transfer ideas and actual intelligence from computer to computer. Forget wires, coaxial cables, etc. I will just use the current electrical system to pass actual intelligence from computer to computer.

I'll invite all my friends on the night of December 22 and have a good bash. Then I am going to try to get my intelligence inside the computer via electricity. If it works–good. If it doesn't work–so long.

If someone else finds this file, I guess it worked. See you in the wires.

So long friends–Chad.

4. Filename: C:WPG

The Macro will print:
See you later!

Instructions for preparing the macro in WP5.1 follows:

1. Ctrl - F10 (define macro)
2. at Define Macro:, key the letter c. Press Enter.
3. at Description: Press Enter.
4. at Macro Dif:, key the message: "See you later!"
5. Press Ctrl-F10 (Macro Define) when you finish keying the message.

The macro is now ready to be recalled at any time by pressing Alt F10 (Macro). At the Macro prompt, key the letter "c" and Enter.

MURDER, P.C. WROTE

Author: Dennis Garner

Announcer: Welcome to our special presentation of "Murder, P.C. Wrote." Sit back, relax, and let our players present a story to you that will electrify your mind, rouse your curiosity, and stimulate your soul.

Remember, this work is entirely imaginary and fictitious. Any resemblance of names and characters to any person is coincidental.

(Announcer reads): Starring In Alphabetical Order

Carl	Carl is a four-year letterman. He has been the quarterback since he was a sophomore. Carl has done well in school. Several prominent universities are recruiting Carl in both football and baseball. He is having a hard time deciding between the glamour and money of football or the long term benefits of baseball.
Dave	The son of a prominent oil man. Dave is a certified genius. Some science wizards have no chance to be "in," but Dave is very popular. He is a great practical joker. His wit toward teachers and administration makes him popular with everyone.
Karen	Karen is a bright girl--a natural-born cheerleader. She is active in school projects. Even though she has not held a school leadership role, her creative ideas have always been the key to successful parties.
Kathryn	Kathryn is Chad's twin sister. Even though she has been in the background of her brother, she remains supportive and fun. She likes to have friends over to her home after school, and her home has become a "second home" to her friends. (Punk Rocker)
Policeman	The policeman looking into the mysterious death of Chad.
Rob	Rob is quick-thinking and intelligent. He is the Sterling Scholar in business where he excelled in computers and accounting. He and Chad wrote a program called Rite-Word when they were juniors. Chad bought the copyright and was a teen-millionaire.
Shanna	"Shan," as her friends call her, is a talent bomb. She can play the piano like no one else. She is also very competitive. She loves to play volleyball, ski, bowl and/or play ping-pong--especially with boys. She often beats them. Determined to succeed, she will graduate in the top 10% of her class.

Announcer: Let me tell you a few things about Chad. Chad and his friend Rob created a programming company when they were juniors. Together they created a word processing program called Rite-Word. Chad bought the copyright from Rob for five dollars. He then modified, released, and marketed the program. It was a huge success. Chad is now a "teen-millionaire."

Rite-Word was one of the first voice activated word processing programs. The voice vocabulary of 100+ words made it easy to use. Saying "save," "print," "margins," etc. was all that was needed to make the commands work.

Last month Rite-Word made the top 10 list of best-selling software in the nation. Grapevine had it that Rite-Word may be selected for the Best Software of the Year Award.

Our story opens at school where friends of Chad are gathered. They have just heard the terrible news that Chad died mysteriously last night. Chad was their school mate.

Announcer: On with our story.

Shanna: Did you hear about the murder last night?

Karen: Oh, I can't believe Chad is dead. Last night we were all at his house for a party. We laughed, ate, and joked half the night. Now he is dead.

Carl: How did it happen?

Rob: Chad evidently decided to do some work on his computer after we left last night. When he turned on the computer--zap. It electrocuted him. The police suspect foul play.

Karen: Oh, how terrible.

Dave: Who could have done it?

Shanna: It had to be one of us. Remember how we played computer games there before we ate dinner. Someone had to place the booby trap while we were eating or watching the video.

Karen: Well, it wasn't me! How terrible.

Kathryn: I can't believe this--one of us, a murderer. Maybe it was an accident.

Shanna: Come on, Kathryn, don't be so naive.

Carl: Maybe someone else did it while we were all watching the video. A burglar or someone else could have broken into his place and set the trap. Maybe it wasn't one of us at all.

Shanna: I thought of that. It would seem more logical. But don't you remember that Chad told us that he let the maid and all the help go so we could be alone and have fun. Besides, the security at his place makes Fort Knox look like a chainlink fence.

Kathryn: Shanna is right, our family had a new security system put in last month. If any one tried to break in, the police would have been there in minutes. Besides, nothing showed on the security system pictures at all. We were the only ones that could have done it.

Karen: Oh my, what can we do?

Shanna: The police are going to think we are the prime suspects. But I am sure it had to be someone else. I'll tell you what we are going to do. We are going to solve this mystery and clear all our names. Let's get going.

Rob: What kind of clues do we have?

Carl: Clue number 1. No one else was near the house last night.
Clue number 2. We played computer games together before dinner.
Clue number 3. We all excused ourselves at one time or another during the night, so any one of us could have set the trap.
Solution: It had to be one of us.

Shanna: Oh, don't be ridiculous. Any other clues?

Kathryn: The policeman that came to the house last night mentioned that the computer Chad was sitting at had the words "Computer--" on the computer monitor.

Dave: What does that mean?

Karen: It means the computer probably killed Chad. Remember how Chad has been obsessed with artificial intelligence in the computers. My guess is that the computer got mad at Chad and did him in.

Carl: What is artificial intelligence?

Rob: It is the development of computer programs that seem to mimic certain functions normally associated with human intelligence.

Karen: Great, just what we need. A computer always whining, acting cranky, refusing to cooperate, or exploding all over the place about the least little thing.

Shanna: No. No. What was on the computer monitor has got to be the key to the murder. What would it mean?

Kathryn: Maybe the computer can tell us.

Rob: Kathryn, be serious, computers can't think or talk.

Shanna: Kathryn may have the answer. Maybe the computer won't talk to us, but something stored on the computer may be just the thing we are looking for.

Rob: Let's look. How about the disk Chad uses here at school. It should be stored in the file cabinet where we keep our stuff for class.

Karen: Good idea. Let's go.

(Karen and others go to the file cabinet and open it. They look through the contents of it, throwing out papers and stuff. Finally, they find Chad's disk.)

Kathryn: Here is his floppy disk. I wonder if it has anything on it.

Karen: Floppy disk. I've about decided a floppy disk is a lower back problem occurring in "computerholics" who sit too long in front of their terminals.

Shanna: Funny, Karen. (Pause) Good job, Kathryn. Let's look at his disk.

(All go to the computer, load Word Perfect, and insert Chad's floppy disk.)

Shanna: Let's put in WordPerfect and look at the directory to see what files are on the disk. I hope he stored it so that the program is software compatible with WordPerfect.

Dave: I thought "software compatible" meant friendly programmers.

Shanna: Funny, Dave, very funny.

Kathryn: I know WordPerfect, I can load it up. When we get WordPerfect running, we just press F5-List Files.

Shanna: Good! That computer class you're taking is going to do us some good.

(All looking at the screen.)

Dave: Look, there's a file named "Money." That's as good a place to start as any. Let's look at it.

Kathryn: Good idea. Let me retrieve the file by pressing "1". (Retrieves the file, "MONEY", and reads it aloud.)

Rob: Wow! I knew he was doing well with his program, but I had no idea he was making that much money--$4.5 million this year in profit! That's our key. Someone was trying to kill him for his money!

(Policeman enters behind them and looks at the computer screen. They all jump back.)

Policeman: What are you doing there?

Shanna: You really scared me. We were just looking at Chad's disk. Chad has millions in profits from his word processing program. Maybe the murderer was after his money.

Policeman: I have already thought of that. Chad was still 17, which means he was still a minor. All of his money will go to his family. (Pause) Or, it could have been a competitor trying to get rid of him. The problem is the security that Chad had around his place--the six of you are the only ones who were here last night. One of you had to set the booby trap. The question is--which one?

Shanna: Let's keep looking at the disk. What other files are on it?

Kathryn: Just a minute. I have to clear my screen and bring up the "list files" screen again.

(Kathryn clears the screen with exit command and then brings up F5.)

Karen: (Pointing at the screen and talking loudly.) This is it. Look at this file name: BLAKMAIL. This has got to be it.

Rob: Blackmail--Oh no!

Shanna: Retrieve it, hurry!

(Kathryn retrieves the BLAKMAIL file.)

Karen: (Reads the file as it appears on the screen.)

Dave: Wow!

Karen: Rob, I can't believe you would kill him. How could you? You murderer. You murderer.

Policeman: (Boastfully) Well, I guess I have solved this mystery. Rob, I have to arrest you. (Others shake their heads in disbelief.)

Rob: Chad was a bum. I hated him. He talked me into getting a copy of those answers and then the test was a breeze. I didn't need his help. Then he told me that if I didn't sell the rights of my program to him, he would tell everyone. I had no idea that the program would make so much money. It seemed like no big deal to me. Programming was just a game for me. But after it became popular, do you think he wanted to share the profits? (Pause) No. He even came back and made me sign a contract to work for him for the next five years. He was as low as anyone can get. But I didn't kill him.

Policeman: Come on, Rob, I need to take you down to the station to book you.

Shanna: Wait a minute, sir. Maybe you're jumping to the wrong conclusion.

Policeman: Wrong conclusion--come on young lady. He has a motive; he was there. If he didn't kill Chad, one of you did. Who else would have done it?

Shanna: I don't know. It seems odd to me that Rob would make it so obvious. Maybe we are overlooking something. Wait a minute. Kathryn, look at that screen a minute. Wasn't something else written on that file?

Kathryn: It's still on the screen. The only thing it says is L=1.75 and R=1.6.) That doesn't mean any thing.

Shanna: Maybe it does. Do you know how to change the margins on the file?

Kathryn: Sure. We learned that the first week of computer class. I need to go to the top of my screen with Home Home Up and then press "Shift F8." Here goes.

(Kathryn changes the margins to L=1.75 and R=1.6.)

Kathryn: Here, I'll print out a copy for you. (Kathryn prints out a copy of the file.) See--it just says the same thing as before, only the margins are different.

Policeman: You see--I'm not just a rookie policeman. Come on, Rob. I'm afraid you're my man.

Shanna: (Looking at the file copy Kathryn printed.) You're right. It is the same file. (Pauses) Wait, you guys--look here. If you just read the first word of every line after the margins have been changed it means something.

Dave: Let me look at that--That is something that Chad would think of.

(Reads the first word of each line.)

Karen: Kathryn, I can't believe you would kill him. How could you? You murderer! You murderer!

Kathryn: I didn't kill him. He is my brother! Why would I want to do that?

Policeman: Like I said earlier. With Chad killed before he was 18, the money that has been put in his estate will go to the family. After your parents die, you would inherit the entire fortune. That is a pretty good motive I would say.

Kathryn: I didn't agree with the way he was treating Mom and Dad. He often told them that if they didn't watch out, he was going to take all his money when he was old enough and leave them without a cent. But I know Chad. He really would not do that. He would have taken good care of my parents. I may have argued and fought with him. But I wouldn't kill him. I wouldn't! Doesn't anyone believe me?

Policeman: Sorry, but I am sure we have the real killer now. Come with me, Kathryn.

Kathryn: I didn't kill him. I don't know anything about electricity. I could never have booby-trapped the computer.

Dave: Oh, yes, you do. Remember last week I bumped into you coming out of the library. The book that you dropped and that I picked up for you was all about electricity. You also had a sack with you with wire and electrical tape in it.

Kathryn: I told you I had to fix the lights in the back yard for the party. You know how it is. Chad was good with wires, but it seemed like he never had time to fix the things around the house. I decided if it were going to be fixed, I would have to fix it. That doesn't make me a murderer.

Carl: You sure seemed interested in electricity in physical science.

Policeman: Good try, Kathryn. Come on.

Shanna: Just a minute, sir. Are you sure that you're doing the right thing?

Policeman: Stay out of it. You guessed right once. This time I know I'm right.

Shanna: Don't be so sure. If I remember, there is still something in that file.

Kathryn: Let's see. I still have the file here.

(Looks at the file on the screen as the others gather around.)

Kathryn: Nothing here--It just gives some color settings to make the screen look pretty. Chad was always playing with the colors on his screen.

Shanna: Let's not overlook anything. Can you change the colors on the screen the way it tells us to?

Kathryn: Yes, but I need to be certain I'm at the top of the file first by pressing Home, Home Up--just to be sure! (Presses Home, Home Up.) Now, let me go to the screen menu by pressing Shift F1; then Select 2 for Display; then "1" for color; then "1" for screen colors. Now we can change the colors. Let's see--

(Reads and follows the menu as she goes along; stops at color selection screen.)

Kathryn: You have the printout of the file, Dave, what colors do I use?

Dave: (Gets the printout and reads the colors to Karen.)

	Foreground	Background
Normal	P	A
Underline	B	A

(Kathryn makes the selection.)

Dave: Now, exit the screen menu by pressing F7 until we get back to the message. Let's see what it says.

(All gather around the computer screen.)

Policeman: Why I'll be. Most of the words are gone and the only letters and words I can read are:

"D-A-V-E- (Dave) wants m-e (me) to buy his parents' copyright."

Karen: I don't understand, what would that do?

Shanna: It's very simple. I heard my folks talking about it last week. Dave's parents made all their money off oil. With those profits they invested all they had in a word processing company. Remember Dave telling us about it in accounting class. They made good money until last year. I understand now that they are about ready to file bankruptcy.

Karen: Dave, I can't believe you would kill him. How could you? You murderer! You murderer.

Dave: Don't be silly, I didn't kill Chad. You are right about my parents' company. When Chad's program became so popular, the company my parents had invested in lost a lot of money and is about to go bankrupt. I don't know what will happen--it will kill mom to have to sell the house. We have talked about it at home. They should have never invested more money than they could afford to lose. With all these problems, I would not kill Chad.

Policeman: Oh, yes you would. With Chad dead, the new version of Rite-Word he was getting ready to release would never have come about. That would give your company at least a fighting chance to make the money back. The new owners of the company may have even bought your parents' interest. That would have solved all your folks' problems.

(Holds Dave by the arm.)

Policeman: Lets go down to the police station.

Announcer: And now for a commercial break. Before we go, let's review all our findings.

Clue 1: Rob was being blackmailed by Chad.

Clue 2: Kathryn, Chad's twin sister, had a motive. She could have all the money made by Chad's program.

Clue 3: Dave's parents were about to lose all they had. He had reason to kill Chad to save his parents' business.

Teacher: For the next 15 minutes, I would like all of you to put on your detective caps. I want you to write what you feel will be the ending of this mystery. All the clues have been given. Please put your name on your paper and hand it in. We will finish the story the last five minutes of class. Good luck and have fun.

At the teacher's direction, the announcer resumes.

Announcer: Now back to our story. Your ideas are probably fun. Let's see what really happened.

Shanna: (Speaking to the Policeman.) Sir?

Policeman: What is it now? Is there something else? I've looked at the file and there are no other messages.

Shanna: I know it. But we haven't looked at all the files on the disk yet.

(Looking at Kathryn.)

Kathryn: (Exits the file by pressing F7; then brings up list of files again by pressing F5.) Let's see if there are any other important files. There's a file named AI.

Shanna: Retrieve it and let's look at it.

Kathryn: (Retrieves AI and reads it aloud.)

Dave: That's it. He did it himself.

Karen: I knew it couldn't have been any of us.

Shanna: I feel so bad he is dead. I still can't believe it.

Karen: Since we've looked at all the files, I guess we can turn off the computer.

Kathryn: Well, it's over. (Goes over to the computer and looks at the screen a moment.)

I'm going to retrieve that macro that was listed. (Retrieves macro by pressing Shift F10; then keying in the macro name.)

Kathryn: (Screams)

Rob: What is wrong?

Kathryn: Look at the screen! Look at the screen!

Dave: It has the words, "See you later."

Carl: Who put that on the screen?

(All shake their head that it wasn't them.)

Shanna: If none of us put those words on the screen--Who did?

(All look at each other, shrugging their shoulders.)

Kathryn: Maybe it was Chad.

(All look at each other, surprised.)

Rob: (Whispering) Chad?

All Characters: (Whispering) Chad?

THE END

Spreadsheets

Category 12B

USING A SPREADSHEET TO PREPARE AN INCOME STATEMENT

CONTRIBUTORS:
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Objectives

- The student will construct formulas to calculate gross income, total expenses and net income statements.

Procedures

- Distribute the handout **GYM LOCKER INCOME STATEMENT**.
- Follow the instructions as given in the handout.

Materials Needed

- Spreadsheet software.

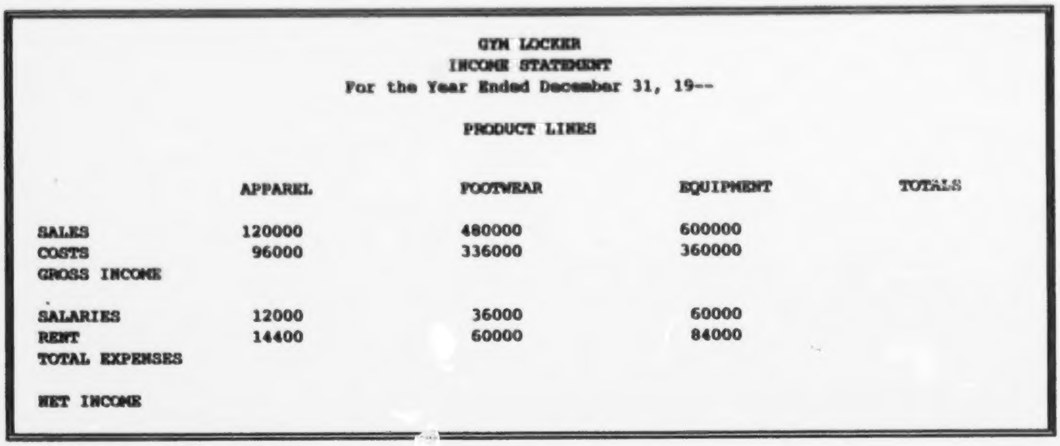
Solution:

- Gross Income: 24000, 144000, 240000
  Total Expenses: 26400, 96000, 144000
  Net Income: 141600
  Horizontal Totals:
    Sales: 1200000
    Costs: 792000
    Gross Income: 408000
    Salaries: 108000
    Rent: 158400
    Total Expenses: 266400
    Net Income: 141600

USING A SPREADSHEET TO PREPARE AN INCOME STATEMENT
GYM LOCKER INCOME STATEMENT

- Directions: Read the problem below. Using pencil, plan the problem, then transfer the data to the computer.

- The GYM LOCKER Sporting Goods Store would like to compare its three product lines to determine the profitability of each line. The following data has been provided for you:



GYM LOCKER
INCOME STATEMENT
For the Year Ended December 31, 19--

PRODUCT LINES

	APPAREL	FOOTWEAR	EQUIPMENT	TOTALS
SALES	120000	480000	600000	
COSTS	96000	336000	360000	
GROSS INCOME				
SALARIES	12000	36000	60000	
RENT	14400	60000	84000	
TOTAL EXPENSES				
NET INCOME				

- The owner of the Gym Locker would like to find the following for each product line:

  . GROSS INCOME (subtract costs from sales)
  . TOTAL EXPENSES (add salaries and rent)
  . NET INCOME (gross income minus total expenses)
  . horizontal TOTALS for each Income Statement item (add)

- Name this file INCOME.

USING A SPREADSHEET TO PREPARE AN INCOME STATEMENT

CALCULATING GRADE AVERAGES USING SPREADSHEETS

CONTRIBUTOR
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Objectives:

- The student will create a spreadsheet for personal use in calculating grade averages in classes.
- The student will apply previously learned formulas to the spreadsheet.
- The student will use "What If" capabilities of the spreadsheet in determining what effect a grade will have upon the average in a given class.

Procedures:

- Prepare students with knowledge of how a spreadsheet works using formulas for calculating.
- Select an appropriate time to begin the spreadsheet project such as the beginning of a quarter or semester.

  Show students samples of formats for spreadsheet design.
- Have students design a spreadsheet for each class in which grade averages will be kept. A template may be used after the design is completed for spreadsheets for additional classes.
- Have students test design for accuracy of calculation.
- Have students use "What if" decision making for exams or assignments, in order to learn what effect different grades will have upon their averages.

Materials Needed:

- Spreadsheet software

Comments:

- This exercise works well with any spreadsheet. It has served to make students more aware of grade averages throughout a marking period. In some cases, students used the "What IF" feature to determine the amount of study time to devote to a pending exam or the amount of the effort to apply to an assignment.

Terminology:

- "What If"--using the spreadsheet to insert various numbers to produce totals for decision--making purposes.
- Template--A model file that contains all the settings, text, and formats to use later in creating new files of the same type.

Solution:

- The following is a student example:

GEOMETRY

Assignment	Date	Possible	Received	Average	Daily Average	Weekly Average
PG. 4 1-28	8/26	28	19	68%	68%	95%
PG. 7 1-24	8/27	24	19	79%	74%	
PG. 11 1-20 ALL 21-31 ODDS	8/28	26	20.5	79%	75%	
GEOMETRY QUIZ #1	8/29	20	15	75%	75%	
PG. 15 1-20	8/29	20	16	80%	76%	
PG. 20-21 1-30	9/3	30	25	83%	77%	83%
PG. 23-24 1-24	9/4	24	20	83%	78%	
PG. 26-27 1-16 & 19	9/5	24	20	83%	79%	
PG. 29 1-24 CHAPTER TEST	9/9	34	28	82%	79%	66%
GEOMETRY CHAPTER #1 TEST	9/10	34	25	74%	79%	
PG. 79 1-25	9/11	25	14	56%	77%	
PG. 39-40 1-28	9/12	28	13	46%	74%	
PG. 43-45 1-28 & 34	9/13	32	23.5	73%	74%	
PG. 48-49 1-16, 18-24 EVEN	9/16	22	17	77%	74%	70%
GEOMETRY QUIZ #2	9/17	22	16.5	75%	74%	
PG. 53 1-24	9/18	24	22	92%	75%	
PG. 57-58 1-28	9/19	28	17	61%	75%	
PG. 61-62 1-23	9/20	25	9	44%	73%	
PG. 66-67 1-28	9/23	28	27	96%	74%	74%
PG. 69 1-21	9/24	25	16	64%	74%	
GEOMETRY CHAPTER TEST #2	9/25	30	18.5	62%	73%	
PG. 79 1-25	9/26	25	23	92%	74%	
PG. 70-71 1-26	9/27	26	16	62%	73%	
PG. 82-83 1-12 14 & 16	10/2	19	18	95%	74%	88%
PG. 83 17-24 PROOFS	10/3	42	38.5	92%	75%	
PG. 84 27-32	10/4	18	14	78%	75%	
PG. 86 1-8	10/8	32	18	56%	74%	57%
PG. 91 1-12	10/9	18	13	72%	74%	
GEOMETRY QUIZ #3	10/9	20	13	65%	74%	
PG. 91-92 13-20	10/10	39	13	33%	73%	
PG. 94 1-16	10/14	16	10	63%	72%	70%
PG. 110-111 1-26	10/18	26	20	77%	72%	
CURRENT AVERAGE				72%		

PAYROLL EXERCISE

CONTRIBUTOR:
Jo Ann Frazell
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Objectives:

- The student will learn/review LOTUS commands in the preparation of a payroll register.

Procedures:

- Explain how to load the LOTUS program. (Explanations may vary depending upon students' previous knowledge or training.)

- Have students follow the steps in the handout **PAYROLL EXERCISE.**

Materials needed:

- LOTUS software

- Handout: **PAYROLL EXERCISE** (Instructions may be rewritten to apply to any spreadsheet software.)

Comments:

- This exercise reviews the LOTUS commands necessary to prepare financial statements for an advanced accounting course. Students, however, need not necessarily have prior knowledge of LOTUS. This handout was used recently in a mini-course for high school sophomores. They completed the exercise in about 2 - 2 1\2 hours.

Solution:

- Editor's comment: The solution is presented on the following page. The payroll register has been divided to accommodate paper width. Students' solutions will not appear in the same format as the solution appears.

EAST LINCOLN TECHNICAL CONSULTANTS
PAYROLL REGISTER

Emp. No.	Name	M.S and Allow	Hourly Rate	Hours Worked	Gross Pay	Accum. Earnings	St. Inc. Tax Pay	Fed. Inc. Tax Pay	FICA Tax Pay	Med. Ins. Payable	Life Ins. Payable	Total Ded.	Net Pay	FUTA TAX Payable	SUTA TAX Payable
100	Melissa Bell	M/O	6.250	38	$237.50	$7,971.37	$5.29	$25.20	$17.84	$5.00	$3.00	$56.33	$181.17	none	none
175	Barry Bingham	M/3	5.650	39	220.35	6,772.35	3.05	14.50	16.55	9.00	4.50	47.59	172.76	1.76	7.71
250	Opal Denton	S/1	7.135	40	285.40	9,481.15	7.90	37.60	21.43	4.00	2.50	73.43	211.97	none	none
325	R.J. Klein	M/2	5.625	39	219.38	2,635.00	3.28	15.60	16.48	7.00	3.75	46.10	173.27	1.76	7.68
400	Michael Mosley	S/0	9.150	40	366.00	10,582.25	12.96	61.70	27.49	4.00	2.50	108.64	257.36	none	none
475	Elizabeth Stephenson	M/6	5.800	40	232.00	6,110.95	1.60	7.60	17.42	10.00	6.00	42.62	189.38	1.86	8.12
					$1,560.63	$43,804.25	$34.08	$162.20	$117.20	$39.00	$22.25	$374.71	$1,185.91	$5.37	$23.51

Fed.Inc. Tax Pay	FICA Tax Pay	Med. Ins. Payable	Life Ins. Payable	Total Ded.	Net Pay	FUTA TAX Payable	SUTA TAX Payable
$ 25.20	$ 17.84	$ 5.00	$ 3.00	$ 56.33	$ 181.17	none	none
14.50	16.55	9.00	4.50	47.59	172.76	$ 1.76	$ 7.71
37.60	21.43	4.00	2.50	73.43	211.97	none	none
15.60	16.48	7.00	3.75	46.10	173.27	1.76	7.68
61.70	27.49	4.00	2.50	108.64	257.36	none	none
7.60	17.42	10.00	6.00	42.62	189.38	1.86	8.12
$162.50	$117.20	$39.00	$22.25	$374.71	$1,185.91	$5.37	$23.51

PAYROLL EXERCISE

Directions: Read and complete the instructions in each step. Check off each step as you complete it.

___ 1. Enter your first name in Cell A1.

___ 2. Enter Headings:
Move to Cell A2 and enter Name
Move to Cell B1 and enter Hourly
Move to Cell B2 and enter Rate
Move to Cell C1 and enter Hours
Move to Cell C2 and enter Worked

___ 3. Starting in Cell A4 list the following employee names in Column A, Rows 4 through 8:
Bell
Denton
Grass
Klein
Manley

___ 4. Move to cell B4 and list the following hourly rates in Column B, Rows 4 through 8:
6.25
7.135
8
5.625
9.15

___ 5. Move to cell C4 and list the following hours worked in Column C, Rows 4 through 8:
38
40
32
39
40

___ 6. Note the alignment of the decimals in Column B. The computer will disregard decimals and align numbers at the right of each cell. To align decimals, the computer must be directed to do so. Instruct the computer to perform this task by telling it the "Range" of cells affected (B4 through B8), the "Format" (appearance) of those cells, and "Fixed" number of decimal places. The number of decimal places may range from 0 to 15.

Move to Cell B4. Enter /RFF3 (Range, Format, Fixed, and number of decimal places). Tell the computer to format the cells in Range B4.B8 (use a dot to point). A point separates the beginning and end of a range as shown. Set for three decimal places. There are two ways to tell the computer the range:

--Simply type the cell address of the beginning and end of the range using a dot (period) to separate the two (B4.B8). Highlight ("paint" or "point") the cells in the range. Note the mode indicator at the bottom right-hand corner of the screen which says "POINT."

Depress the dot (period). Use the down arrow key and note that the cells are being highlighted ("painted"). Highlight Cells B4 through B8. After highlighting the range, depress ENTER. The formatting is now complete for that range.

— 7. A new employee has been hired. Move to Cell A9 and type the employee's name: Stephenson.

Note that this name did not fit into the cell when it appeared on the screen. The computer predetermines a number of spaces in each cell, which is called the "Default." The default for each cell is 9 spaces. When more spaces are needed, the default spaces can be changed.

A column may range in width from 1 to 240 spaces in the LOTUS program. A single cell or row cannot be changed in width, only column widths can be changed. Column widths may be set individually (one column at a time) or globally (all columns on the worksheet).

Instruct the computer to widen Column A:

Move to any cell in Column A
Type /WCS12 (Worksheet, Column, Set-width)

Now the computer instructs you to "Enter column width:" and will show the default width. There are two ways to enter this information. You can simply enter the width you want. If you are not sure what width is the best, use the right and left arrow keys. As you use these keys, the column will adjust accordingly and show you exactly how the column will appear on your spreadsheet.

— 8. The employee whose name you entered in Cell A9 receives an hourly rate of pay of $5.80 and worked 40 hours this week. Enter this information in Cells B9 and C9. Change the format of Cell B9 to show the hourly rate in fixed format.

— 9. When employee Stephenson was hired, employee Grass left the company. The information for Grass could be eliminated by removing the information in that row cell by cell. If only the information is removed, a blank row would remain. Since it does not seem very desirable to leave a blank row, another way to delete the information is to delete the entire row. When a row is deleted, the computer will renumber the rows as though the deleted row never existed.

To instruct the computer to delete the entire row (Row 6):

Type /WDR (Worksheet, Delete, Row)

When the computer asks for "range of rows to delete," simply return if you are on Row 6. If not on the row to be deleted, type any cell address in the row to be deleted, such as C6.

Columns may be deleted by typing similar commands (using Column instead of Row). Rows or columns may be inserted by using the command Insert instead of Delete.

___ 10. Another new employee, Bingham, has been hired. To list that name alphabetically, a blank row is needed between Bell and Denton.

Using the appropriate commands, insert a new row at Row 5.

Type /WIR (Worksheet, Insert, Row)

When the computer asks for the range to insert, enter any cell address in Row 5, such as C5.

___ 11. In the blank row just created, add information for another new employee in the appropriate cells:

Type Bingham, 5.65 hourly rate, 39 hours worked

Change the format of Cell B5 to show the hourly rate in comma format with three decimal places.

___ 12. Since Columns B and C have more spaces than are necessary to accommodate the 7 spaces required in each, shorten the column widths in these two columns to only 7 spaces. Decide if the appearance of the columns looks good. Adjust the width of these two columns to any width which you feel looks best. (If you have forgotten how to adjust the column widths, refer to instructions in Step #7.) Remember the Default column width is 9. Whenever a cell's width is too small to display a number, asterisks are displayed in the cell.

Experiment with different column widths until you feel comfortable with the required commands and how they affect the appearance of the worksheet.

__ 13. Insert a new column before Column B. Move to any cell in Column B.

Type /WIC

Type the heading for the column Marital Status And Allowances in cells B1 and B2. (Use two lines for the heading. You may abbreviate the heading as you think is appropriate. Adjust the width of the column to fit the heading you have typed.)

__ 14. In the new column you just created (now Column B), type the marital status (M or S) and the number of allowances for each employee:

Bell M/O
Bingham M/3
Denton S/1
Klein M/2
Manley S/0
Stephenson M/6

__ 15. Our basic spreadsheet now needs to be completed and enhanced with a heading, first names of the employees, additional columns for gross pay, tax deductions, net pay, and other related information.

Move to any cell in Row 1. (A quick way to get to Row 1 is to use the HOME KEY.) Insert 4 rows above Row 1 to allow enough space for a two-line heading and two blank rows. (/WIR A1.A4 or use the point method to highlight the range)

__ 16. Move to Cell C1 and type EAST LINCOLN TECHNICAL CONSULTANTS. The main headings of any report should be in all capitals but column headings should not.

__ 17. Move to Cell D2 and type PAYROLL REGISTER.

__ 18. We are now going to add the first names of the employees to our register.

Information in a cell may be changed in two different ways. One way is to simply retype new information on top of the old. The new information replaces the old. A second way is to "Edit" the existing information.

Move to Cell A8 where you have previously typed the name Bell. In this cell type Melissa Bell. (Note that Bell has been replaced with Melissa Bell.) In this and any of the following steps, widen any columns which are not long enough to hold the information added or appear crowded.

__ 19. Move to Cell A9 and type: Barry Bingham.

___ 20. Move to Cell A10 and use the following commands to "Edit" the cell.

Locate the Function key at the top of the keyboard, F2
Press F2 (Note the mode indicator says "Edit.")

Use the left arrow key to backspace to the first letter of the name. Type the first name using capitals and a space. After pressing the "Enter" key, the first name now will be in front of the last name of the employee. You may also move to the beginning of a cell by pressing "Home" after pressing F2.

Type Opal (Denton) (The name in parentheses should not be retyped.)
Move to the appropriate cells and type the first names of these employees:
R.J. (Klein)

Michael (Manley)
Elizabeth (Stephenson)

___ 21. To improve the appearance of your worksheet, the column headings will look better if they are centered above the amount columns. To instruct the computer to center text, (numeric data cannot be centered as it will be read as text if centered) a ^ needs to be entered before the column heading in each cell. To center headings you have previously entered, move the cell pointer to the first cell to be centered and type:

/RLC (Range, Label, Center)

When it says "Enter range of labels" use the pointer method to highlight all headings to be centered and press return.

Move to Cell E5 to begin typing the following headings in Columns E through L. Use two lines for each heading as shown below:

Gross	St. Inc.	Fed. Inc.	FICA	Med. Ins.	Life Ins.	Total	Net
Pay	Tax Pay.	Tax Pay.	Tax Pay.	Payable	Payable	Ded.	Pay

Adjust any of the column widths necessary to give the spreadsheet an attractive appearance.

___ 22. We now need to complete the tax, insurance, and other columns of the payroll register spreadsheet. Some of the columns may be completed by typing in variable information while others may be best completed by using a formula. You may have noticed as you typed the column headings at the right, the columns at the left of the screen disappeared from view. You may "freeze the titles" in Column A so that they will stay on the screen by issuing a sequence of commands to the computer.

Move to any cell in Column B so you will be just to the right of the column you wish to "freeze" (Column A). Type the following commands:

/WTV (Worksheet, Titles, Vertical)

Note that you will not be able to move the cursor to Column A. Column A is "frozen."

___ 23. Complete the Federal Income Tax and Medical Insurance deductions columns as follows:

NAME	Fed. Inc. Tax	Medical Ins.	Life Ins.
Bell	25.20	5.00	3.00
Bingham	14.50	9.00	4.50
Denton	37.60	4.00	2.50
Klein	15.60	7.00	3.75
Manley	61.70	4.00	2.50
Stephenson	7.60	10.00	6.00

___ 24. Complete the Gross Pay, State Income Tax, FICA Tax, Total Deductions, and Net Pay columns by issuing commands to the computer to perform arithmetic functions necessary to calculate these items.

___ 24A. Since the Gross Pay is calculated by multiplying hours worked times Hourly Rate, issue this command to the computer in Cell E8 (the first cell in the column for the Gross Pay):

+C8*D8

Since this is the same formula to calculate the Gross Pay for all of the employees, it is efficient to "copy" the formula to the other cells in the column instead of retyping the formula several times.

The "Copy" command allows you to take the contents of one cell or a range of cells (source range) to another cell or range of cells (target range).

Type /C (Slash, Copy) If you are already in the cell of the "source range," that range (E8.E8) will appear on the screen. (If you were copying several cells, you could enter that range of cells.) Simply press ENTER; and the computer will want to know the "target range" (where to copy the formula).

Enter E9.E13 or use the point method to highlight the target range's beginning and ending cells.

When you press ENTER, the formulas have been copied and the answers also appear.

___ 24B. Insert a column between Gross Pay and St. Inc. Tax Payable to list each employee's accumulated earnings for the year. Head the column Accum. Earnings.

Listed below are the employees' accumulated earnings before this pay period. Use a formula to add the following amounts of the accumulated earnings to the gross pay in Column E (i.e. +E8+7733.87).

Bell	7733.87
Bingham	6552.20
Denton	9195.75
Klein	2416.60
Manley	10546.25
Stephenson	5878.95

___ 24C. Figure the state income tax at 21% of the federal income tax. Businesses may use a handy tax calculation guide or simply calculate the tax by multiplying. On the computer multiplying is the most efficient method to use.

Issue the command to the computer to multiply the federal income tax times 21%. Move to cell G8 (the first cell in the column for state income tax) and type:

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+H8*.21 or  +H8*21%
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The amount of $5.29 should now appear in Cell G8.

Since this is the same formula to calculate the state income tax for all of the employees, use the "Copy" command to enter the same formula in the rest of the column.

```
/C
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After the copy command is issued, the computer will then ask for the "source range." Enter the address of the cell (G8) or simply return if the computer indicates that is already the source range (G8.G8).

After indicating the "source range" to the computer, then indicate the "target range." Enter G9.G13.

When you return, the formulas have been copied; the state income tax amounts appear in the column.

___ 25. FICA tax is currently 7.51% of an employee's gross earnings. Issue the command to the computer to compute the FICA tax for each employee. Move to Cell I8 (first cell in the FICA tax column) and type:

+E8*.0751 or +E8*7.51%

Copy the formula to Cells I9 - I13.

___ 26. Issue the command to the computer to all of the deductions. Move to cell L8 (the first cell in the "Total Deductions" column).

Totals could be calculated by using either a "formula" or a "function." A "formula" always begins with a + followed by the formula. In this case the formula would be to add each cell in a column to find the total, such as +G8+H8+I8+J8+K8. Typing such a formula would be cumbersome although the formula can also be entered by "pointing" to each cell instead of typing each cell address.

A more efficient method is to use a "function." A "function" command always begins with the @ sign. A "function" is a formula which is already built into the program. Since we want the sum (total) of the deductions, we can use the function @SUM, which will give us a total of the cells in the range we wish to have totaled.

Issue the following command:

@SUM

When you have entered the left parenthesis, the computer then waits for you to indicate the beginning of the range you wish to have totaled. At that time, move to the first cell in the range to be totaled (G8). After moving to that cell, press the "point" key (period). Pressing the "point" at the beginning of the range is called "anchoring" the range. That means that the beginning of the range is kept in place or "anchored" when you move the cursor to other cells.

After "anchoring" the beginning of the range, move the cursor to the last cell in the range to be totaled (K8). Notice the cells are "painted" as you move the cursor from cell to cell. When you have finished "painting" the range to be totaled, press the) and ENTER. This indicates to the computer that this is the end of the range of cells to be totaled. The sum of the range of cells should now appear in cell L8. (NOTE: If the width of Column L is not wide enough, asterisks will appear in Cell L8. Change the column width if necessary to accommodate the number of digits needed.)

Copy the formula for the total deductions to all of the appropriate cells as you did in 25A and 25B.

__ 27. Issue the appropriate command to the computer to calculate the net pay for each employee.

Move to Cell M8 (The first cell in the "Net Pay" column)

Type: +E8-L8

Copy the formula for the net pay to all of the appropriate cells as you did in the above steps.

__ 28. It is a good idea to save your work periodically even if you are not yet finished. To save all of the hard work you have finished on this spreadsheet, you must tell the computer to do so. Issue the command as follows:

/FS (Slash, File, Save)

When you save a file on your disk, you must give the file a name. When the computer asks you for the name of your file, type a word which has 8 or fewer characters and no spaces. The characters may be upper or lower case. Characters may be alphabetic, numeric, or the underscore. (No other symbols or characters may be used.) The computer program adds an extension to your file name, .WKS, which simply says that you are saving a worksheet file.

Name your spreadsheet PAYROLL.

__ 29. If you are quitting for the day, type the following command:

/QY (Slash, Quit, Yes)

When you see the DOS prompt on the screen (C >), type PARKHEAD and press ENTER. When the Parkhead menu appears on the screen, DO NOT press ESC. Take your disk out of the disk drive and return your disk to the file.

If you are not quitting yet, proceed to step #30.

___ 30. Retrieve Payroll Exercise which you previously completed. You saved it under the name PAYROLL.

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/FR  (Slash, File, Retrieve, PAYROLL)
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When the computer asks for the name of the file to retrieve, that file can be selected in two ways:

a. You may type the file name PAYROLL. (The file name must be typed exactly as you originally entered it.)
b. You may use the arrow keys to highlight the name of the file and press ENTER.

___ 31. Add two additional columns after Net Pay to show your employer's unemployment taxes. Head these columns FUTA Tax Payable and SUTA Tax Payable. Your employer has to pay this tax on an employee's weekly earnings only if the employee's accumulated earnings are less than $7,000. The current tax rates are .8% of gross pay for FUTA and 3.5% of gross pay for SUTA tax.

An @IF statement is needed to figure the amount of tax liability in each column. In columns N and O, an amount should appear only if there is a tax liability. Go to N8 and enter the following @IF statement to complete the FUTA Tax column.

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@IF(F8<=7000,E8*.008,"none")
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Now you enter an @IF statement for the SUTA Tax in Column O.

___ 32. Insert a column to the left of Name in column A for employee numbers. (You will need to clear the titles you previously froze.) Type an appropriate heading. Use data fill to enter the employee number. Start with number 100 and use increments of 75.

```
/DF (Slash, Data, Fill)
```

When it shows "Enter Fill range:" use the point method to highlight the cells to be filled in Column A.

Start: 100   Step: 75   Stop: 8191 (Default)

___ 33. Since the Columns F through P will require amounts stated in dollars and cents, tell the computer to show all of the amounts with two decimal places in "currency" or "comma" (,) format. Use currency format for the first amount and the total of any column. Use comma format for other amounts in dollars and cents columns.

Type /RFC2 (Slash, Range, Format, Currency, & no. of decimal places) or

Type /RF,2 (Slash, Range, Format, "Comma," & no. of decimal places)

Column widths, decimal settings, and other commands may be set either "globally" (the entire worksheet) or "individually" (one column at a time). If you adjust a column width or decimal setting individually, only the column you specify will change; the other columns will remain at their default setting or at a setting you assigned to that column individually. However, if you assign column widths or decimal settings "globally," all of the columns will be adjusted except any of those which have been set individually. In other words, a command issued to a column "individually" will override a command issued "globally."

You may issue an individual command either before or after a global command, and the individual command will take precedence.

If Column E incorrectly shows the hours worked in currency or comma format, Column E should be changed to format with fixed decimals set at zero.

Type /RFFO (Slash, Range E8.E13, Format, Fixed, Zero)

___ 34. The Payroll Exercise must now be completed with rulings and totals of some of the columns.

To make an underscored line in a spreadsheet program, it is not possible to make an underscore in the same cell that holds any other information. Underscores, or characters resembling underscores, must then be entered into separate cells.

When making underscores on financial statements, it is customary to use a series of hyphens to resemble the single underscores and a series of equal signs to resemble double underscores. (The actual underscore key could be used, but the underscores would then be far removed from the last amount in a column to be totaled, and the double underscores would be separated a great distance from one another.)

The easiest method to enter an underscored line under one column is to use the "repeat" command on the keyboard. The backslash (\) when typed before any character is the command to repeat that key to fill the entire cell with a series of that character. To then fill other cells with the same character, the best procedure to use is to "copy" the original cell containing the series of the character.

Our first underscore will be under Columns F through P where we wish to have the totals of those columns.

Move to Cell F14 in the Gross Pay column.

Enter the following command:

\-   (Backslash, hyphen)

When you press ENTER, the cell F14 should then be filled with a series of hyphens. Your next step will be to copy Cell F14 to Cells G14 through P14.

Issue the following command:

/C (Range)   (Slash, Copy, from Range F14 to Range G14 through P14).

___ 35. The next step is to enter the totals in Cells F15 through P15. Use the @SUM function to total the Gross Pay column.

Now copy this function to Cells G15 through P15.

Enter the following command:

/C (Range)   (Slash, Copy, from F15 to Range G15 through P15)

The totals of columns should now appear in Columns G15 through P15. Adjust the column width of any cells which are not wide enough.

Enter the double rule lines. Use a series of equal signs to resemble the double rules.

Move to Cell F16 and begin by issuing the following command:

\=   (Backslash, equal sign)

Finally, copy the series of equal signs created in Cell F16 to Cells G16 through P16.

/C   (Range)   (Slash, Copy, Range)

___ 36. Create a macro to print out the payroll register. Press F5 and use "Go to" to move the cursor to cell A27. (You may later need to adjust the row location of your macro to get a printout of your payroll exercise but not the print macro.) Enter the macro in column B in that row. Document the macro by entering ’\p on the first line of your macro in column A and by entering the explanations in column C as shown below.

’\p	’/pp	Print to printer
	’os	Options, setup
	’x(esc)	Clear previous setup
	’\018\015~	Compress print
	’mr135~	Margin right = 135
	’q	Quit menu
	’r	Range to print
	(home)	Upper left
	’.	to
	(end)(home)	Lower right
	(pgup)~	Omit printing the macro
	’ag	Align, go
	’pq	Page, quit

Name the macro. Place the cell pointer on the cell containing ’/pp and enter:

/RNC (Slash, Range, Name, Create)

When it asks for the name, enter:

\p and Enter

When it asks for the range:

Press Enter

Execute the macro. Holding down the Alt key, push the "p" key.

Use the Print Screen key to print a copy of your macro.

___ 37. SAVE your Payroll File. Since you have already saved a file under this name, the computer will ask you if you want to cancel your command or replace (erase the old and save the new worksheet). You want to select replace.

/FS PAYROLL (Slash, File, Save)

MURDER P.C. WROTE
LOTUS

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Objectives:

- The student will review Lotus commands: copy, erase range, graph, sort.

Procedures:

- Follow the instructions included in the script. The following concepts are used for this mystery.

  1. Delete fields and field ranges.
  2. Graph
  3. Sort

Materials Needed:

- Script: **MURDER, P.C. WROTE LOTUS**
- Lotus, (any version).

Comments:

- This mystery will probably take two class periods to complete. I will often time the students to see who can solve the mystery first. I also require the students to print out all work.

Solutions:

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       A B C D E F G H I J K L M N O P Q R S T U V W X Y Z AAABACADAE

 1     DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
 2     DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
 3     DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
 4     DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
 5     DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
 6     DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
 7     DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
 8     DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
 9     DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
10     DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
11     DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
12     DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
13     DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
14     DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
15     DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
16
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     A B C D E F G H I J K L M N O P Q R S T U V W X Y Z AAABACADAE
1    DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
2    DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
3    DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
4    DDDDDD      DDDDDD        DDDD  DDDDDD  DDDD          DDDDDDDD
5    DDDDDD  DDDD  DDDD  DDDD  DDDD  DDDDDD  DDDD  DDDDDDDDDDDDDDDD
6    DDDDDD  DDDD  DDDD  DDDD  DDDD  DDDDDD  DDDD  DDDDDDDDDDDDDDDD
7    DDDDDD  DDDD  DDDD        DDDD  DDDDDD  DDDD  DD      DDDDDDDD
8    DDDDDD  DDDD  DDDD  DD  DDDDDD  DDDDDD  DDDD  DDDDDD  DDDDDDDD
9    DDDDDD      DDDDDD  DDDD  DDDD          DDDD          DDDDDDDD
10   DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
11   DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
12   DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
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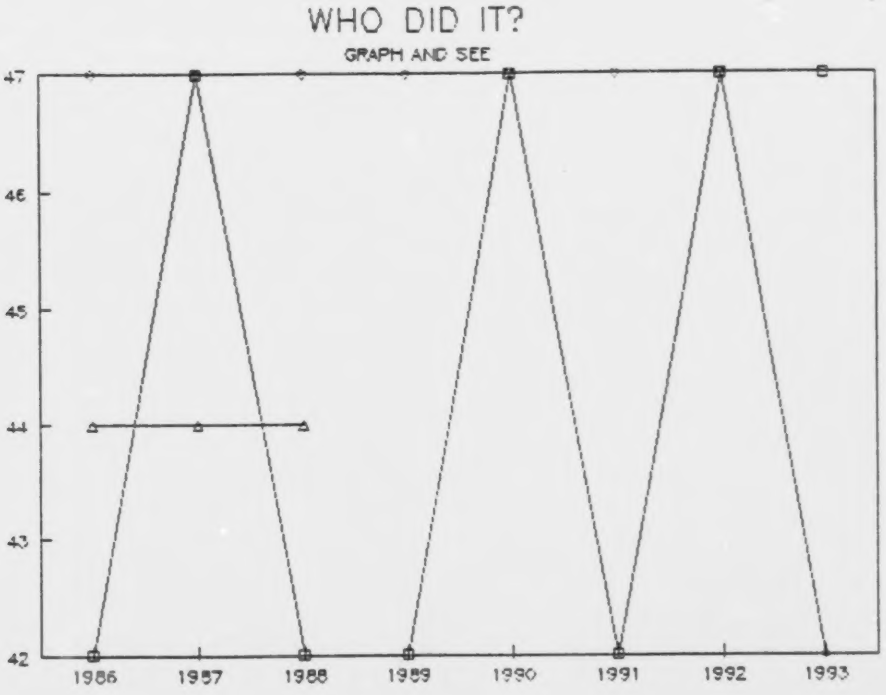
15   DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
16   DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
17
```



WHO DID IT?
WHY WAS IT DONE?
WHAT WAS THE PAYOFF?

	NAME	WHY	MONEY	WHAT WENT WRONG
	Allen	Blackmail	0	Because of the accident
	Announcer	Drugs	0	For selling drugs
	Burke	Drugs	0	He was Hypnotized
	Dann	Love	0	His promise to marry a lie
	Daworski	Love	7000	Kill the coach--too good
	Donald	Money	15000	Problem with wife
******	Inspector	Money	20000	Vigilante Group
	Keith	Psycho	25000	Wanted more money
	Lisa	Revenge	50000	Way he treated Natalie
	Natalie	Suicide	100000	Way too many drug deals

MURDER P.C. WROTE
LOTUS
Author: Dennis Garner

Announcer: Welcome to our presentation of "Murder, P.C. Wrote." In following this witty, tongue-in-cheek, Jessica-Fletcher-like adventure, you are confronted with a series of puzzles that require the use of different spreadsheet commands or formulas.

Remember this work is entirely imaginary and fictitious. Any resemblance of names and characters to any person is coincidental.

Starring In Alphabetical Order:

Allen: Allen grew up in a family where sporting activities were everything. His two older brothers play professional tennis and basketball. Allen had asthma when he was small and never really fit in. He really did not enjoy most sports; however, he gradually outgrew the asthma. When he was 12, he began gymnastic lessons. Allen was a natural at gymnastics. Now he is on the national team and expects to make the next Olympics.

Burke: Burke is the coach of the United States national gymnastics team. For the past three years since Burke became coach, the U.S. team has been ranked number one in the world. Many people think Burke's method of coaching is too strict. Most agree however, that he is a genius at getting the most out of the team.

Dann: Dann is the trainer for the gymnastics team. He had been the number one gymnast in the world for three years. Because of an injury to his neck two years ago, his gymnastic career is over.

Donald: Donald is the leader of the pack. Even though he did not make the team until Dann's injury, his leadership skills made him the team captain. He is always encouraging the rest of the team to work hard. He is a real practical joker also. One day he fixed Keith's pants so that they fell off as he was working on the mats.

Keith: Keith is the best rings man in the world. He has incredible upper body strength. It seems that Keith would concentrate on what he wants his body to do--and just do. His creative moves and jumps have brought him much fame. He is a real performer and crowd pleaser.

Lisa: Lisa is the newest member of the team. This is to be her first international competition. Lisa is small and bubbly. She performs well in front of the crowds. Lisa is the first person to ever do a quadruple back. Many gymnasts study her technique to learn how to do the rotation.

Natalie: Natalie has enjoyed dance ever since she first learned to walk. Her parents said that she walked on her toes even when she was just a baby. She is a terrific ballet dancer. Her poise and style make her gymnastic routines beauty-in-motion. Natalie has been on the team for nine years and everyone expected her to "retire" from the team soon.

Inspector: A Romanian police inspector assigned to the case.

Announcer: Let me give you a few details about the United States gymnastics team. During the past several years since Burke has been the coach, he has made the U.S. team the team to beat. It doesn't seem to matter who makes the team--Burke just has the ability to make them the best in the world. The team is preparing for the World Championships, which will be held in Japan in three weeks. Prior to the world championship a preliminary match will be held with Romania. This match is the last chance to tone up for the world championships. The team enjoys going to Romania where the people love gymnastics.

Now on with our story. All of the gymnastics team members have been called to the office of the Komi-Dome where the match will take place. It has the largest seating capacity in Romania and can seat 21,000 people. The time is 2 a.m.

Donald: What in the world is going on? Why wake us up at 2:00 in the morning just to come down here? Wait till I tell Burke. He will be burning mad.

(Looks around. Sees all the other members there.)

There had better be a good reason for getting all of us out of bed.

Inspector: Be quiet. I regret to inform you that your coach, Burke Manning, has been killed. We need to talk to each of you.

Natalie: What! Burke killed? How did it happen? I just talked to him two hours ago.

Inspector: You'll remember he demanded an office separate from the dressing rooms. We set him up in a room; but when the guard was checking the doors, he discovered Burke's was still open. When he went in Burke was dead. We figure he had been dead for only one or two hours. I am sorry about this, but I do need to talk to each of you.

(The Inspector starts talking to each of the team members while the announcer talks.)

Announcer: The Inspector interviewed each of the team members that night. It was 4:30 a.m. before they got to bed. However, the team members decided to meet at 9:30 a.m. the next morning in the cafe across the street to discuss what to do.

THE NEXT MORNING IN THE CAFE

Allen: I still can't believe that Burke is dead. Who would want to kill him?

Lisa: I don't know, I wish we were back in the U.S. That Inspector really scared me last night. He seemed to think that I killed Burke.

Keith: Don't worry Lisa, he did the same thing with me. He said that when we came back for our practice after dinner last night, we were the last ones to see Burke alive.

Donald: Yes, maybe the last ones except for the murderer. I think we better put our heads together and solve this mystery. I'm not sure how much help we'll get from the Romanians. It would be a national embarrassment for someone in Romania to kill the American coach. I'm sure they will try to make it look like one of us did it.

Dann: What can we do? (Pause) Please pass another crepe. I love these cherry crepes in this outdoor cafe. (Looking around.) And it looks so pretty out here, just like a postcard.

Natalie: Dann, be serious. I can't believe you can even eat after what has happened.

Dann: Well, I am sorry he's dead. But a man has to eat. Besides, do you really think we can do anything? I can see the headlines now (Says in an exaggerated tone.) "U.S. Gymnastics Team Solves International Murder Mystery." Come on you guys, be reasonable. We need to let the authorities take care of this.

Natalie: Be quiet and act natural you guys--here comes that police inspector who talked to us last night.

Inspector: Good morning. I hope you all got enough sleep last night. I was sorry I had to wake you.

Donald: Did you find out who murdered Burke?

Inspector: It is just a matter of time. We have surveillance cameras in the Komi-Dome. We are looking through them. At least we will know which people to watch. By the way--all of you have had your passports canceled until this mess is cleaned up.

Allen: What did happen--I'm not sure I understand all the details.

Inspector: Well I can't tell you everything for obvious reasons. However, we know that he was killed around midnight.

Keith: Maybe some one wanted to rob him.

Inspector: The office and Burke's belongings seemed to be in order. Even the computer that he had been using was still on. There was no evidence that Burke was trying to stop the man as there is no sign of a struggle. In fact, Burke was still in his chair. We figure that Burke knew the man who killed him.

Lisa: How terrible. Why would anyone want Burke dead?

(Inspector leaves)

Donald: I am sure glad he left. Listen you guys, if Burke had been working on his computer I am sure he would have done something to let us know who the murderer is. Come on--lets go to the Komi-Dome and see what we can find out.

(All start to leave, on the way Allen speaks.)

Allen: Did you guys hear the joke about the police inspector? What do you have when you find a police inspector up to his neck in cement?

Lisa: I don't know, a tortured inspector?

Allen: No--Not enough cement!

Announcer: At the Komi-Dome our gymnasts go quickly to the office where the murder occurred.

Dann: This place is sure quiet. I guess it is OK for us to be here.

Donald: Of course, they would have police posted here if they weren't finished with their investigation.

Natalie: Well, let's get busy. Now--where would you put information about who might murder you.

Allen: Well, Burke was a computerholic--my guess is that he put something on the computer. The inspector said his computer was still on.

Donald: Good idea. (Goes to the computer.) Look, the data disk is gone. Whoever killed Burke probably destroyed the disk.

(Inspector enters.)

Inspector: I knew if I left you alone you would come back here. What are you up to now?

Donald: We're looking for clues to Burke's death. Look, the data disk in the computer is gone.

Inspector: We thought there might be a message on the computer, so I pulled the data disk--but the disk is bad. We can't get it to work at all. Something must have happened to the disk. Too bad.

Natalie: Burke was too smart for that. He would have left a backup disk. Remember how obsessed he was about backing up his data. Let's look in his disk-pack.

(Looking through the disks.)

Here is a disk with yesterday's date on it that says "backup." I'll bet this has the information.

Inspector: A back-up disk--you Americans think of everything.

Dann: I know LOTUS. Let's see what is on this backup disk.

Announcer: You will need to complete the following steps to solve this part of the mystery:

1. Make all columns two (2) spaces wide.
2. Enter "DD" in cells A1 through AE12.
3. Enter the data now.

(Wait while students enter date.)

Keith: Look at this block of letters--it doesn't mean anything.

Lisa: Just a minute--look, the instructions at the bottom--lets see--.

Announcer: To solve the problem erase the following cells and cell ranges.
D4.F4, J4.M4, P4, T4, W4.AA4
D5.D9, G5.G8, J5.J9, M5.M7, P5.P9, T5.T9
W5.W9, K7.L7, Y7.AA7, L8, AA8
E9.F9, M9, Q9.S9, X9.AA9

(Wait while students erase cells.)

Inspector: Look, it spells the word (Supply word from screen). What would that have to do with his murder?

Keith; I don't know. The only one I know of that has_____ is Dann. You always have ____ if you are the trainer.

Inspector: Thank you. I believe we have our murderer. Dann, I guess I will have to arrest you.

Dann: Don't be ridiculous. I didn't kill Burke. Just cause I am a trainer, that doesn't make me a killer. I do have enough ___ for small injuries. But that is all.

Allen: Dann--I saw you and Burke arguing last week. The only thing I heard was that Burke told you to clean up your act because if he called the police and reported the missing ___, you would never be able to work professionally again.

Natalie: Remember Dann, it was almost negligence on Burke's part that caused you to have your accident two years ago. You were trying the new double twist when Burke just left you alone. If he had been spotting as he was supposed to be doing, you would still be competing.

Dann: Burke was wrong in leaving me alone. But that is all water under the bridge. As far as this ___ business, Burke is the one that would be in trouble. He took some amphetamines from the drawer. I caught him and he said he needed them for Lisa and that he would return them. When I asked him about replacing them, he said that the drugs were under my care and it would be his word against mine. I would be the one to lose. The little weasel was using me, but I wouldn't kill him.

Inspector: Sorry Dann. I need to take you in. Just because Burke was a drug dealer doesn't give you the right to kill him. Please follow me.

Lisa: A drug dealer--Burke. I don't believe it.

Inspector: I am afraid so. We have been watching him for months. He has been using the travel with the team as a cover for drug smuggling. I knew it would be a matter of time before someone caught him.

Donald: Wait a minute. Let's see if there is something else on the disk.

Inspector: I have to go make a phone call. I'll be right back.

Allen: That inspector is an absolute jerk. If he were suspecting Burke for drug dealing, why are we prime suspects. I have a feeling he isn't telling us everything. Say, did you hear the joke about the inspector? What do you get when you have 10 inspectors at the bottom of a lake? (Pause.) A good start.

Lisa: Quit making smart remarks, Allen. The Inspector is a little weird though. Hey, look at this file. It looks like a normal file except the numbers don't add up.

(STUDENTS: AT THIS POINT, PLEASE ENTER THE FOLLOWING INFORMATION ON YOUR SPREADSHEET. BE SURE TO CLEAR YOUR SCREEN BEFORE YOU ENTER THE DATA.)

```
          A          B          C          D          E          F          G          H          I

 1                                              WHO DID IT
 2                                            GRAPH AND SEE
 3
 4      YEAR       1986       1987       1988       1989       1990       1991       1992       1993
 5
 6     SALES         42         47         42         42         47         42         47         42
 7     GOODS         42         42         42         42         42         42         42         42
 8     COST          47         47         47         47         47         47         47         47
 9     PROFIT        44         44         44
10
11
```

Keith: That is just data about some company.

Donald: Wait a minute. Look at the Title. GRAPH AND SEE. I wonder what we would get if we were to graph it.

Inspector: What are you doing now?

Allen: We found some other information on the disk, and we are going to graph it.

STUDENTS: GRAPH THE DATA, PUTTING THE YEARS AS THE X AXIS--LINE GRAPH.

Note: Use the option feature to adjust the Y-axis and place 47 as the maximum value.

Donald: It has the initials ____. (Reads initials from the screen.)

Inspector: (Talking to Allen.) Isn't your full name Allen McKay. That gives us your initials, Allen. I am going to have to arrest you for murder.

Allen: Don't be silly. I didn't do anything. Those initials could mean anything.

Lisa: Oh, Allen! You had everything to gain by killing Burke. When the gymnastics committee was talking with me about coming on the team I heard them talking to you also. Remember, they told you to learn all you could from Burke because you were next in line to be the coach.

Allen: Burke really doesn't care a thing about gymnastics--his only concern was for winning. Now that we have a good team we could really set some trends for future gymnastics. It would be fun to be the coach, but I would never kill. Not even Burke.

Inspector: I'm sorry, Allen. I'll have to take you in.

Allen: I tell you, I'm innocent. Didn't your pictures from the videos tell you anything?

Inspector: The only people on the film were you guys, our maintenance man, and Daworski, our back-up man.

Allen: Well, Daworski is the guy. What would he be doing here that time of night?

Inspector: I don't know. We are checking up on him now. His clearance is very high. We have some men who have gone to talk to him, but he is clean. I'll see if they have heard anything. (Inspector leaves.)

Natalie: I would like to see those pictures from the videos myself! I can remember seeing the inspector just before I went into Burke's office.

Donald: It really sounds to me that this man Daworski may be a phony! Let's look at the file and see if there is anything else.

Dann: The only thing left on the file is four columns. Hum, it does have an interesting title...

STUDENTS: YOU WILL NEED TO SAVE YOUR DATA AND CLEAR YOUR SCREEN. PLEASE ENTER THE FOLLOWING DATA.

```
              A              B                 C                D          E            F         G
 1                                                 WHO DID IT?
 2                                               WHY WAS IT DONE?
 3                                              WHAT WAS THE PAYOFF?
 4
 5        NAME           WHY                MONEY                   WHAT WENT WRONG
 6
 7        Keith          Money              15000                   For Selling Drugs
 8        Lisa           Blackmail          25000                   Way too many drug deals
 9        Donald         Love                   0                   Way he treated Natalie
10        Inspector      Drugs                  0                   Kill the coach--too good
11        Announcer      Psycho              7000                   He was hypnotized
12        Natalie        Love                   0                   His promise to marry a lie
13 ****   Dann           Revenge            50000                   Because of the accident
14        Daworski       Drugs             100000                   Wanted more money
15        Burke          Suicide                0                   Problem with wife
16        Allen          Money              20000                   Vigilante Group
17
18
```

STUDENTS: THIS PART OF THE MYSTERY WILL REQUIRE THAT YOU SORT EACH COLUMN SEPARATELY. BE SURE THAT THE DATA RANGE YOU SORT IS ONLY THE COLUMN YOU ARE SORTING. SORT COLUMN B, THEN SORT COLUMN C, THEN D, AND THEN COLUMN E. BE SURE TO SORT IN ASCENDING ORDER.

Donald: Well I'll be. This says that the Inspector killed him. I don't understand the vigilante part.

(ENTER Daworski)

Keith: I think we have solved the murder. According to this file the Inspector is responsible, but he just left saying that you were the one responsible.

Daworski: You're right, it was the Inspector. I'm really not his assistant. I work with Internal Affairs. We have been having a lot of suspects killed in the last year. We have suspected a vigilante group but have never been able to catch them.

Natalie: I'm glad you caught him, but I can't believe he would kill Burke--it seems so unlike Burke to sell drugs.

Daworski: I have a surprise for you. Burke is just fine. We set the whole thing up to try to catch the inspector. We planted a drug record on Burke with his permission so we could flush these guys into the open. We had special surveillance in this room and had Burke wear a bullet proof vest. Burke is not only the best gymnastic coach but quite an actor.

Allen: I don't understand the graph with the letters AM. What does that have to do with anything?

Daworski: That was the clue that Burke thought of to plant so we could get the rest of the vigilante group. The name of their group was AM. It is a Romanian abbreviation for what you Americans would call "Ear for an Ear."

Dann: That is why the inspector left so quickly to make a phone call.

Daworski: That's right. He called one of the other members of the group to set up an emergency meeting. Now we have a list of all the members. Burke is quite a computer wiz, with your help, of course.

(BURKE ENTERS AND ALL CROWD AROUND HIM)

Burke: Enough visiting, lets get down to the gym and work out. We have a competition to win tonight.

SORTED TELEPHONE LIST

CONTRIBUTOR:
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Objectives:

- The student will learn to sort using the database function of a spreadsheet package.

Procedures:

- Have each student create a database with spreadsheet software for storing his/her friends' telephone numbers:

  1. Create 3 columns in your spreadsheet. Label them: Firstname, Lastname, Phone No.
  2. Make columns appropriate widths to hold your data.
  3. Enter the names and phone numbers of ten of your friends in random order.
  4. Save the worksheet. Print the data in the original order.
  5. Sort the data by last name. Print the data in sorted order. Save the worksheet under a different name.

Materials needed:

- Spreadsheet software

- List of students friends and phone numbers

Comments:

- This is a simple, yet interesting project. By having students create lists of their own friends, "duplicate" solutions should be eliminated.

- This project could be made more complex by asking students to create phone lists of teachers in the school, club members, or class lists. Addresses, dues paid, parents' names, etc. could also be added to the database.

- The data sort command should be available in any spreadsheet software package.

Database

Category 12C

DATABASE MYSTERY

CONTRIBUTOR
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Objectives:

- The student will practice applying database skills by following a series of instructions to identify a specific record in an existing database.

Procedures:

- Tell students to assume that they have been hired as a database consultant for a security agency. They will be required to use the database to track bank employees and, eventually, solve a crime.
- Provide students with database software, the handout **DATABASE "MYSTERY" EXERCISE**, and the **INFORMATION SHEET**.

Materials needed:

- Database software and instruction sheets.
- Handouts: **DATABASE "MYSTERY" EXERCISE** and **INFORMATION SHEET**.

Comments:

- If practical, this exercise could be used as a classroom contest. Students could compete individually or in teams to be the first to correctly answer all twenty questions. Although this exercise is not precisely the kind of database problems one would encounter in a business setting, it provides students with an excellent opportunity to perform multiple database searches and sorts.
- Classroom experience demonstrates that this exercise is well liked by a broad range of students. Identifying the "criminal" in the final stages of the exercise gives students a feeling of accomplishment. Typical simulation exercises do not always provide this intangible reward.
- This was written for use with dBase III+. However, with only minor modifications, it could be used with any commonly used database program.

Solution:

1. 3995
2. 21
3. 5
4. 7
5. 11
6. 13
7. 6
8. 1
9. Madeline Newell
10. Ruth Taussig
11. Admin
12. Teller
13. President
14. Male
15. 13
16. 6
17. 12
18. 11
19. 7
20. Bruce Ismay

DATABASE "MYSTERY" EXERCISE

CONGRATULATIONS! You have been hired as a computer consultant by the ACME Security Agency. Your job is to use the computer to assist in security related tasks.

Your first task will be to set up a database to help with security at First Insecurity Bank. This database will be used to record information about all of the bank's employees. Use the information provided to create the database. Answer the questions on the answer sheet. Be sure to read each question completely before attempting to answer it. **Good Luck!**

---

1. To begin with, you will have to **CREATE** the database. Name it BANK. Use the table below for the names, types, and widths of the fields.

   On the CREATE DATABASE screen, there is an indicator in the upper right hand corner which reads **"BYTES REMAINING."** When you begin this says "4000." Look at it again after you have finished defining all of the fields. How many bytes are left? ____________

Field Name	Field Types	Width	Decimals
FIRST_NAME	Character	10	
LAST_NAME	Character	11	
GENDER	Character	1	
AGE	Numeric	2	0
JOB_ASSIGN	Character	10	
FULL_TIME	Logical	1	
HAIR_COLOR	Character	2	
EYE_COLOR	Character	2	
WEIGHT	Numeric	3	0
HEIGHT_FT	Numeric	1	0
HEIGHT_IN	Numeric	2	0

HINT: If you forgot to check the number of bytes, remaining, you can go back to the CREATE screen by using the MODIFY command.

2. Now that you have the basic structure of the database created, use the **APPEND** command to enter the information about the employees of the bank. (This information is on the sheet at the back of this test.) How many employees are there? ______

   Use the **COUNT** function and a **SEARCH CONDITION** to answer questions 3 through 14. Also, please note the following information:

   HAIR COLOR ABBREVIATIONS:

   BK = BLACK, BL = BLONDE, BR = BROWN, GR = GRAY, RD = RED

   EYE COLOR ABBREVIATIONS:

   BL = BLUE, BR = BROWN, GR = GREEN, GR = GRAY

3. How many employees have blonde hair? _____

4. How many employees have brown eyes? _____

5. How many tellers are there? _____

6. How many full time employees are there? _____

7. How many employees weigh more than 200 pounds? _____

8. How many employees weigh less than 100 pounds? _____

9. Use the **LIST** command to make a print-out showing the following information for all of the employees:

   FIRST_NAME, LAST_NAME, JOB_ASSIGN AND FULL_TIME

   Use this printout to answer this question. Which employee follows Archibald Gracie in your list? ______________________

10. **CREATE** a report which uses the same fields as in question 9. Make a printout of your report.

    Which employee is before Helen Newsom in your print-out? ______________

11. **INDEX** the database according to JOB_ASSIGN. **BROWSE** the database in its new order. Which JOB_ASSIGN is first in the list? ________________

12. **MODIFY** the report question 10. Set the GROUP ON option to JOB_ASSIGN. Print your new report. Which JOB_ASSIGN includes the most employees? ________________

13. Use the report from question 12. Which JOB_ASSIGN has the least employees?

14. INDEX the database on GENDER. **CREATE** a report which lists the LAST_NAME and the GENDER for each employee. Tell the report to GROUP ON GENDER. Print the report. Are there more male or female employees? _____________

THERE'S BEEN A ROBBERY AT THE BANK!

When the bank president came in this morning, he found the vault open and $1,000,000 worth of pennies had been taken. Your job is to use the clues given below to solve the crime.

NOTE: You will use the COUNT and LIST commands extensively. Additionally you need to build some SEARCH conditions to solve the crime.

15. There was no sign of a break-in, so the thief must have had a key to the front doors. Only full-time employees are issued keys. If only full time employees are suspects, how many suspects are there?______

16. The police who investigated the crime scene found a brown hair on the floor of the vault. How many employees have brown hair? _______

17. Laboratory analysis of the hair indicates that it came from a male. How many male employees are there? _______

18. There is a weight-sensitive alarm on the floor of the vault. It goes off if anyone weighing more than 150 pounds steps on it. It didn't go off during the robbery. How many employees weigh less than 150 pounds? _____

19. Although the thief was very clever and spray-painted over the lenses of the security cameras, one camera managed to get a partial picture. Computer analysis indicates that the thief has brown eyes. How many employees have brown eyes? _______

20. Using all of the information from questions 15 through 19, identify the thief using the LIST command and a SEARCH condition. (Hint: You are looking for a full-time brown haired, brown eyed male who weighs less than 150 lbs.) Who is the thief? _____________

INFORMATION SHEET

Name		Gender	Age	Job Assignment	Full Time?	Hair	Eyes	Weight	Height Feet	Inches
Edward	Smith	M	58	EXAMINER	Y	GR	BL	210	5	10
Eric	Meyer	M	28	SECURITY	Y	BR	BR	185	6	0
Robert	Murdoch	M	62	SECURITY	Y	GR	BL	245	5	8
Elsie	Bowerman	F	32	PRESIDENT	Y	BL	BL	135	6	1
Thomas	Andrews	M	35	SECURITY	Y	BR	BL	200	6	0
Katie	Gilnagh	F	48	ADMIN	N	BL	BL	140	5	8
Hanna	Abelson	M	32	TELLER	N	BK	GN	235	5	10
Joseph	Boxhall	M	29	TELLER	N	BK	BL	195	6	0
Bruce	Ismay	M	33	SECURITY	Y	BR	BR	138	5	4
Norah	O'Leary	F	27	TELLER	N	BL	BL	99	5	3
Marie	Young	F	22	TELLER	N	RD	BR	125	5	2
Archibald	Gracie	M	37	ADMIN	Y	BK	BR	250	6	1
Madeline	Newell	F	29	EXAMINER	Y	BL	BL	145	5	6
John	Astor	M	31	SECURITY	N	BL	BR	310	6	2
Lucille	Carter	F	22	TELLER	Y	BR	BR	112	5	7
Isidor	Straus	M	22	TELLER	Y	BK	BR	112	5	6
Ruth	Taussig	F	45	TELLER	Y	RD	GR	145	5	3
Helen	Newsom	F	31	TELLER	N	RD	BL	107	5	3
Jack	Thayer	M	33	TELLER	Y	RD	BL	234	6	1
Ellen	Toomey	F	42	TELLER	N	BR	GR	131	5	10
Ling	Hee	M	44	TELLER	Y	BR	GR	175	5	3

THE BASICS OF PLANNING A DATABASE

CONTRIBUTOR:
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Objectives:

- The student will learn the basic vocabulary and activities involved in developing a database.

Procedures:

- Explain basic database terminology. (Distribute handout: **BASIC DATABASE VOCABULARY.**)

- Explain how to plan a database and use library facilities. Distribute handout: **PROCEDURES FOR PLANNING YOUR DATABASE.**

- Have students complete the database project:

  -- Research a topic for a database project
  -- Prepare the database information on index cards
  -- Input data using database software
  -- Prepare questions/answers for the database
  -- Have a fellow student complete the database questions

Materials needed:

- Handouts: **BASIC DATABASE VOCABULARY** and **PROCEDURES FOR PLANNING YOUR DATABASE**

- Index Cards

- Database Software

Terminology

- See handout: **BASIC DATABASE VOCABULARY**

Comments:

- This basic exercise will provide a good introduction to developing a database.

Solution:

1. Database: Student must have a minimum of 25 records:

NAME	BORN	DIED	AGE OF DEATH	VICE-PRES	OCC. OR PROF
Abraham Lincoln	1809/02/12	1865/04/15	56	Andrew Johnson	Lawyer
Andrew Jackson	1767/03/15	1845/06/08	78	John C. Calhoun	Lawyer
Andrew Johnson	1808/12/29	1875/07/31	66		Tailor
Calvin Coolidge	1872/07/04	1933/01/05	60	Charles E. Dawes	Lawyer
Dwight D. Eisenhower	1890/10/14	1969/03/28	78	Richard M. Nixon	Soldier
Franklin D. Roosevelt	1882/01/30	1945/04/12	63	John N. Garner	Lawyer
George Washington	1732/02/22	1799/12/14	67	John Adams	Planter
Gerald Ford	1913/07/14			Nelson A. Rockefeller	Lawyer
Grover Cleveland	1837/03/18	1908/06/24	71	Thomas A. Hendricks	Lawyer
Harry S. Truman	1884/05/08	1972/12/26	88	Alben W. Barkley	Businessman
Herbert C. Hoover	1874/08/10	1964/10/20	90	Charles Curtis	Engineer
James A. Garfield	1831/11/19	1881/09/19	49	Chester A. Arthur	Lawyer
James E. Carter, Jr.	1924/10/01			Walter F. Mondale	Businessman
James Madison	1751/03/16	1836/06/28	85	George Clinton	Lawyer
James Monroe	1758/04/28	1831/07/04	73	Daniel D. Tompkins	Lawyer
John Adams	1735/10/30	1826/07/04	90	Thomas Jefferson	Lawyer
John F. Kennedy	1917/05/29	1963/11/22	46	Lyndon B. Johnson	Author
John Quincy Adams	1767/07/11	1848/02/23	80	John C. Calhoun	Lawyer
John Tyler	1790/03/29	1862/01/18	71		Lawyer
Lyndon B. Johnson	1908/08/27	1973/01/22	64	Hubert H. Humphrey	Teacher
Martin Van Buren	1782/12/05	1862/07/24	79	Richard M. Johnson	Lawyer
Richard M. Nixon	1913/01/09			Spiro T. Agnew	Lawyer
Theodore Roosevelt	1858/10/27	1919/01/06	60	Charles W. Fairbanks	Author
Thomas Jefferson	1743/04/13	1826/07/04	83	Aaron Burr	Planter, Law.
Ulysses S. Grant	1822/04/27	1885/07/23	63	Schuler Colfax	Soldier
Warren B. Harding	1865/11/02	1933/08/02	57	Calvin Coolidge	Editor
William B. Harrison	1773/02/09	1941/04/04	68	John Tyler	Soldier
William H. Taft	1857/09/15	1930/03/08	78	James S. Sherman	Lawyer
Woodrow Wilson	1856/12/29	1924/02/03	67	Thomas R. Marshall	Educator
Zachary Taylor	1784/11/24	1850/07/09	65	Millard Fillmore	Soldier

2. Test Questions: Student must have a minimum of 10 test questions.

SAMPLE TEST QUESTIONS
PLEASE ANSWER QUESTIONS AND ALSO GIVE SEARCH INSTRUCTION USED:

1. Who is the President that was born in the year 1809?
2. Who was the Vice-President of Thomas Jefferson?
3. Which President was a planter and a lawyer?
4. Who was Abraham Lincoln's Vice-President?
5. Which Presidents were soldiers?
6. Which President was a tailor?
7. Who was a teacher?
8. What is the teacher's birthdate?
9. What year did Zachary Taylor die?
10. How many Presidents have the first name of James?

3. Answer Key: Student must provide answers on a separate page.

ANSWERS AND SEARCH INSTRUCTIONS

1. Abraham Lincoln
1809/.. by born

2. Aaron Burr
Thomas Jefferson by Name

3. Thomas Jefferson
Planter.. by Occ. or Prof.

4. Andrew Johnson
Abraham Lincoln by Name

5. Dwight D. Eisenhower
Ulysses S. Grant
William H. Harrison
Zachary Taylor
Soldier by Occ. or Prof.

6. Andrew Johnson
Tailor by Occ. or Prof.

7. Lyndon B. Johnson
Teacher by Occ. or Prof.

8. 1908/08/27
Teacher by Occ. or Prof.

9. 1950/07/09
Teacher by Occ. or Prof.

10. James A. Garfield
James E. Carter, Jr.
James Madison
James Monroe
James.. by Name

BASIC DATABASE VOCABULARY

DATABASE - An organized collection of information on a particular topic. All the facts that a company has to keep track of to do its business.

This might include (a) names and addresses of customers with credit cards; (b) totals that each customer spends on products; (c) lists of all the goods the company sells. From this data, the company could get its computer to make lists of customers who buy only at holidays or who are late in paying bills. Using the same database, the sales manager can mail ads about holiday sales to one group of customers, and the account manager can mail reminders about late payments to others. Some computer specialists say there is a lot of private information about us on business and government data bases. Should the use of database information be controlled?

DATA - Pieces of information.

FILE - A collection of information on a particular topic that your computer tucks away under a single label.

Your computer knows how to reach into a file, take out facts, use them, and leave the file in perfect order. Actually, it is the same as a database. However, in more complicated database programs, one database can be made up of several files (states, baseball players).

FIELD - A data entry category (age, address, birthday).

RECORD - A group of related fields (each baseball player's information).

EXAMPLE OF HOW VOCABULARY WORDS ARE USED - Database named "States" is made up of 50 records. Each record name is the name of a specific state. Each record has 6 fields: Date of Entry, Area, Capital, Population, Representatives, Largest City.

PROCEDURES FOR PLANNING YOUR DATABASE

1. Decide what body of information you would like to organize and store. (See the sample topics below for ideas.)

2. Obtain teacher approval of your topic area.

3. Decide what categories of information you want to store. Each category will be the name of a field in your database. Try to include fields that hold numerical data as well as fields that hold verbal data. (Minimum of 5 fields).

4. Decide how many records your database will have. (Minimum of 25).

5. Gather the data to put into the file. Write the information on index cards. (Show to instructor.)

6. On another piece of paper, identify your database name and give at least 10 questions for another classmate to complete using your data file.

7. On another piece of paper give the answer key to #6 and also the search instructions necessary to retrieve information.

TURN IN: Index Cards
Printout of Listing of Input
10 Questions
Answer Key and Search Instructions

SAMPLE DATABASE TOPICS:

FAMOUS AUTHORS
FAMOUS SMITHS
HURRICANES
EUROPEAN COUNTRIES
COLLEGES
PRESIDENTS
WOMEN TRACK AND FIELD
RECORD HOLDERS
FLOWERS
EXOTIC PLANTS
PRIVATE COLLEGES

KENTUCKY DERBY HORSES
INDIANAPOLIS 500 WINNERS
MUSICAL COMPOSERS
HEISMAN TROPHY WINNERS
STATES
NFL TOP 20 RUSHERS
HOCKEY TEAMS
NATIONS
ACADEMY AWARD WINNERS
BIRDS
FIGHTER AIRCRAFT

CONSTRUCTING A FLAT-FILE DATABASE

CONTRIBUTOR
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Objectives:

- The student will develop a flat-file database with familiar data.

Procedures:

- Explain the nature of flat files to students with examples of field definitions. Each record in a flat file contains information about each of the fields. Note that flat files are the basis of all flat-file databases, relational databases, word processing tables, and spread sheets.

- Illustrate the construction of a flat-file with the handout **GUIDE TO RESTAURANTS.** Discuss the fields to be used and their definitions. Suggest popular examples of food service such as airline meals, fast-food restaurants, or gourmet establishments. Encourage students to include establishments from their experiences including institutional food services.

Materials needed:

- Handout: **A GUIDE TO RESTAURANTS**

Terminology:

- Flat File - One or more records with the records defined by one or more fields. The fields are the key to the usefulness of the file.

Comments:

- You may wish to extend this exercise by having students prepare a computerized database using this data.

Solution:

- Student example:

THEME	DATE	MEAL	PRICE	SERVICE	SPECIAL	RATING
Fast Food	12/3/91	Lunch	$4.02	3	Good fries	**
Fast Food	12/4/91	Lunch	$3.90	3	Coke was watery	**
Chinese	12/6/91	Dinner	$8.20	4	Avoid the beef	***
Convenience	12/7/91	Snack	$1.23	1	Stale goods	*
French	12/13/91	Dinner	$22.00	5	Fantastic bread rolls	****

Prepared By: Steven Student Date 12/16/91

A Guide To Restaurants

FIELD	Description
THEME	The general type of restaurant, such as Greek, Pizzeria, Italian, Fast Food, French, Airlines, etc.
DATE	The date of the observation or experience.
MEAL	Breakfast, Lunch, Dinner, Snack, etc.
PRICE	The average price of a meal per person including all costs.
SERVICE	An estimate of the service in terms of attentiveness, accuracy, speed, and friendliness. A scale of 1 - 5 would be suitable.
SPECIAL	A contributing quality that is unusual and/or unexpected. For example, "Be sure to get the pie," or "Never get the salad!"
RATING	An overall estimate of the establishment using the standard five star scale where: ***** = EXCELLENT, **** = VERY GOOD, *** = SATISFACTORY, ** = TOLERABLE and * = INFERIOR.

THEME	DATE	MEAL	PRICE	SERVICE	SPECIAL	RATING

Prepared By: ______________________________ Date ______________

STUDENT DATABASE

CONTRIBUTOR:
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Objectives:

- The student will be able to develop a database with familiar material and perform the basic functions of adding, deleting, changing, sorting and printing from the database.

Procedures:

- Reproduce the handouts: **STUDENT DATABASE INSTRUCTIONS, STUDENT DATABASE LISTING,** and **STUDENT DATABASE TEST.**
- Review basic database functions with students and show specific examples.
- Instruct students to follow the handout instructions to produce the required printouts.
- Have students complete the attached test upon completion of the assignment.

Materials needed:

- Database software and a data diskette.
- Handouts: **STUDENT DATABASE INSTRUCTIONS, STUDENT DATABASE LISTING,** and **STUDENT DATABASE TEST.**

Comments:

- This generic exercise can be adapted to any database program. Minor changes may need to be made depending on the database program.

Solution:

- Solutions will vary depending upon the names students add to their databases. You may wish to alter some of the instructions to better fit your geographical location.

STUDENT DATABASE INSTRUCTIONS

PART I - CREATION OF THE DATABASE

1. Using the database software, create the database format using proper types and sizes of fields.
2. Check the database format carefully and make any changes necessary. Save the database format. Name your database **STUDENT**.

PART II - CHANGES AND SORTING

3. Enter the 20 names on your list as directed on the handout STUDENT DATABASE LISTING. Print a list of all 20 names.
4. Create a print format called **ALLPRT** to print all fields of the database. (The printout may have to be compressed on the printer.)
5. Sort the fields in alphabetical order by last name and first name. Print the alphabetical listing.
6. Turn in your original source document (completed STUDENT DATABASE LISTING) and your two printouts.

PART III - CHANGES AND SORTING

7. Make the following changes to your file.

    A. Change Betty Jones' grade to 11.
    B. Change Patricia Daniels to Patricia Randall.
    C. Change Ronald Anderson's GPA to 1.35.
    D. Change Ronald Anderson's Phone Number to 688-1390.
    E. Change Trenise Martin's MI to K.

8. Sort the file in alphabetical order. Create a new print format (called NOADD) that contains only the following fields: ID NO, LAST NAME, FIRST NAME, MI, GRADE, PHONE NO., HR TEACHER, GPA. Print the listing.
9. Sort the file in numerical order by GRADE and ID NUMBER. **Print** the listing using **NOADD**.
10. Delete Robert Williams from the file.
11. Sort the file in alphabetical order and print the listing using NOADD.
12. Turn in your three printouts.

PART IV - SELECTIVE PRINTING

13. Create a new print format called **GPA** with the following fields: **ID NO, LAST NAME, FIRST NAME, GRADE, GPA, HR TEACHER, ZIP CODE**.
14. Make printouts for the following conditions:
    A. **Print** only 12 grade students.
    B. **Print** only 11 grade students with GPA > 3.00.
    C. **Print** 10, 11, or 12 grade students with zip codes of 33147.
    D. **Print** any student with less than 1.50 GPA.
15. Sort by HR TEACHER. Use the **NOADD** print format. Print a list of students grouped by HR TEACHER. (See your teacher for information on how to do this.)
16. Turn in your five printouts.

STUDENT DATABASE LISTING

ID NO	LAST NAME	FIRST NAME	M I	ADDRESS	CITY	ST	ZIP CODE	GRADE	PHONE NO.	HR TEACHER	GPA
0893478	JONES	BETTY	A	2281 NW 93 Terrace	Miami	FL	33147	12	757-1334	LYDZINSKI	3.55
0798345	WILLIAMS	ROBERT	F	1761 NW 95 Street	Miami	FL	33147	12	696-4579	LYDZINSKI	2.44
7838655	MARTIN	TRENISE	R	12514 NW 95 Street	N. Miami	FL	33167	11	695-4579	SEAY	3.00
2378560	ANDERSON	RONALD	R	234 E. 49 Street	Hialeah	FL	33145	10	688-4151	LYDZINSKI	1.45
1859344	DANIELS	PATRICIA	B	3224 NW 82 Street	Miami	FL	33147	09	696-2367	SEAY	2.95

1. Add the names of 15 people to this list. Use real names and addresses if possible. One of the 20 names may be yours.
2. Use students from all four grades (9, 10, 11, and 12.)
3. Grade Point Averages (GPA) should range from 1.0 to 4.0.
4. All data must be reasonable and logical.

STUDENT DATABASE TEST

1. Load your database program and retrieve the STUDENT database file.

2. ADD the following name to your database:

   ID = 1294637
   LAST = LEVENOWITZ   FIST = Stanely   MI = F
   ADDRESS = 13501 NW 12 Avenue
   CITY = N. Miami   ST = FL   ZIP = 33167
   GRADE = 10   PHONE = 688-1963
   HR TEACHER = Seay   GPA = 2.83

3. SORT the file alphabetically by LAST NAME AND FIRST NAME.

4. Using ALLPRT print format, print an alphabetical list. Title it: (Your name) Alphabetic List.

5. Create a new print format, called **TEST**. Include the following fields in this order:

   ID NO, LAST NAME, FIRST NAME, HR TEACHER, GRADE, GPA, CITY.

   Save this print format for use on the next printout.

6. Sort your file by grade and ID number.

7. Using TEST print format you created in step 5, print the following:

   A. All 12 grade students with GPA > 2.50.

   B. All 10 or 11 grade students who live in the city of Miami.

8. Delete Stanley Levenowitz from your file.

9. Sort the file back in alphabetical order.

10. Print a final listing using the TEST print format. Title the report: (Your Name) Final Alphabetical Listing.

11. Turn in the four printouts for the test grade.

GOVERNMENT–DATABASE INTERDISCIPLINARY PROJECT

CONTRIBUTOR:
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Cedar Rapids, IA 52351

Objectives:

- The student will use a database to organize and arrange information from another class (academic area).

Procedures:

- Distribute the handouts: **DATABASE PROJECT INSTRUCTIONS** and **THREE BRANCHES OF GOVERNMENT**
- Use the **DATABASE PROJECT INSTRUCTIONS** as the procedures for developing the database. The information to be entered is found in the **THREE BRANCHES OF GOVERNMENT** handout.

Materials needed:

- Handout: **DATABASE PROJECT INSTRUCTIONS**
  THREE BRANCHES OF GOVERNMENT
- Database software (Note: This project was written using AppleWorks 3.0; however, it could be adapted easily to dBase and Microsoft Works.)

Comments:

- We use this concept to tie together various subject areas so that the student can see how academic areas are related.
- This project takes coordination between the computer teacher and the history teacher.

Solution:

```
File:  Government Report: 17 ci
                    BRANCH OF           CHARACTERISTIC                    OTHER INFORMATION
ITEM                GOVERNMENT

Article II          Executive           Enforces laws, veto power         President
Advisors            Executive           Appointed by President            Approved by Senate
George Bush         Executive           President
Enforce laws        Executive           President, Vice President
Executive branch    Executive           enforces laws
Head of Senate      Executive           Vice President                    Current:  Dan Quayle
Lives in the U.S.   Executive           President & Vice President 14 yrs.
Natural born citiz. Executive           President & Vice President
President           Executive           35 yrs. old. nat born citizen,    Total of 2, 4-yr. terms, 10 yr.
                                        live in U.S. 14 yrs. total
Dan Quayle          Executive           Vice President                    Head of Senate
2, 4 yr. terms,     Executive           President of U.S.



Same qualifi-
cations as          Executive           Vice President
Veto Power          Executive           given to Presidents
Vice President      Executive           Same qualific. as President       Dan Quayle
Appt. by Pres.      Executive, Jud.     Always approved by Senate         Cabinet advisors & S. C.
                                                                          Justice
Approved by Senate  Executive, Jud.     Appointed by President            Cabinet advisors & S. C.
                                                                          Justices
Article III         Judicial            Interprets laws, highest court sys.appt. by Pres., approved by Sen.
Associate Justices  Judicial            8 Total                           life term
Chief Justice       Judicial            appointed by President, life term Highest court system
Highest Court Sys.  Judicial            Interprets laws, apt. by Pres.    Sup. Court, 1 Chief Just., 8
                                                                          Assoc.
Interprets laws     Judicial            Highest Court. System             Federal Courts
Judicial            Judicial            Interp. laws, highest. Court sys.
Other fed. courts   Judicial            Interprets laws
William Rehnquist   Judicial            Chief Just. of Sup. Court         life term, appt. by Pres.
Article I           Legislative         makes laws                        Cong. 535 memb.
According to Pop.   Legislative         determine no. of Cong. mem.,2-yr  Iowa has 8 rep., 8 elec. vo.
Acc. 2 each State.  Legislative         2 Sen. from each state            6-yr. term
Congress            Legislative         535 mem., elected                 House of Reps. & Senate
House of Reps.      Legislative         435 mem., 2 yr. term              25 yrs old, 7 yr citizen of
                                                                          U.S.
Lives in Wash. D.C. Legislative         Congress members                  8 elect. votes, 6 house, 2 Sen.
Iowa                Legislative         8 elect. votes, 6 house
Legislative branch  Legislative         House of Rep., Senate             makes laws
Lives in district   Legislative         House of Rep. members
Lives in state      Legislative         Senate members
Makes laws          Legislative         House & Senate                    535 members total
Senate              Legislative         100 total, 2 from ea. State       6 yr term, 30 yrs. old, 9 yr
                                                                          cit.
Amendment I         other               speech, religion, press, assembly
Amendment 1-10      other               "Bill of Rights"
Bill of Rights      other               amendment 1-10
Constitution        other               law of the land
Intro. to the       other               known as "Preamble"
constitution
Law of the land     other               constitution
Preamble            other               introd. to const.
Speech, religion    other               Amendment I Bill or Rights
press
```

DATABASE PROJECT INSTRUCTIONS

Using the handout (THREE BRANCHES OF GOVERNMENT IN WASHINGTON D.C.), create a database with the following categories:

ITEM
BRANCH OF GOVERNMENT
CHARACTERISTIC
OTHER INFORMATION

STEP BY STEP PROCEDURE

1. Load AppleWorks and proceed to the Main Menu:
   Select 1: Add Files to the Desktop
   Select 4: Data Base
   Select 1: From scratch
2. Key in a file name for your database. (Choose a name that will be easy for you to identify.)
3. Follow the instructions on the bottom of the screen, then press return.
4. Push: OPEN-APPLE 1 to blank out the words, Category 1.
5. Key in the name of your four categories listed above pressing return after each entry.
6. After keying in the fourth category (OTHER INFORMATION), press escape and the space bar as the screen instructs.
7. You are ready to enter information into your database: Go down the list of 44 items, one at a time, and enter information for each item into the four categories. (You will use the resource page to find information to fill in all four categories for each item. Note: Some of the items will not have information in the "Other Information" category.)

Reminder: Always SAVE your file when you make changes, and always SAVE your file at the end of each class time.

PRINTING INSTRUCTIONS

1. Load AppleWorks and proceed to the Main Menu:
   Select 1: Add files to the Desktop.
   Select 2: From the current disk, place your data disk in the disk drive and press return.
2. Choose the database file you named (on 3 Branches of Government) and press return.
3. When your file appears on the screen, use OPEN-APPLE P to print your file.
4. From the new screen select 2: Create a new "tables" format.
5. From the next screen select: From scratch and give your "table format" a name that you will remember.
6. From the new screen you can widen your columns using the OPEN-APPLE KEY & THE ARROW KEYS. Make each of your four columns wide enough to print out all information.
7. After you have made your columns wider, you can also arrange your "BRANCH OF GOVERNMENT" category in alphabetical order if you wish. Place your cursor on "BRANCH OF GOVERNMENT" category and push OPEN-APPLE A. Select category (BRANCH OF GOVERNMENT); now choose 1: From A to Z.
8. Use a size small enough that your entire file will fit on one piece of paper. To do this push OPEN-APPLE 0. From the new screen key in the letters CI (characters per inch). When the prompt appears: Characters? Key in 17, return, then escape.
9. You should now be back to the screen that reads: "REPORT FORMAT." Now push: OPEN-APPLE P and choose the name of your printer.
10. Key in the date as directed.
11. Make sure your printer is ready and depress return to print.
12. Check your report carefully. Are your columns wide enough to include all information?

THREE BRANCHES OF GOVERNMENT
IN WASHINGTON D.C.
(Items)

1. Amendment I
2. Amendment 1 - 10
3. Article I
4. Article II
5. Article III
6. According to Population (Virginia plan)
7. According to 2 from each state (New Jersey Plan)
8. Advisors
9. Associate Justices
10. Appointed by the President
11. Bill of Rights
12. George Bush
13. Cabinet
14. Congress
15. Chief Justice
16. Constitution
17. Enforce laws
18. Executive Branch
19. Head of Senate
20. Highest Court System
21. House of Representatives
22. Interprets laws
23. Introduction to the Constitution
24. In Washington D.C.
25. Iowa
26. Judicial
27. Legislative Branch
28. Law of the Land
29. Lives in district elected from
30. Lives in state elected from
31. Lives in the United States
32. Makes laws
33. Natural born citizen
34. Other federal courts determined by Congress
35. Preamble
36. President
37. Dan Quayle
28. William Rehnquist
39. Re-elected for a total of two 4-year terms or a total of 10 years
40. Same qualifications as the President
41. Senate
42. Speech, religion, press, assembly
43. Veto Power
44. Vice President

THREE BRANCHES OF GOVERNMENT IN WASHINGTON D.C.

(Resource Page)

Article I

Legislative Branch - Makes Laws
Congress = 535 members

House of Representatives = 435 members
2-year term
Representative: Must be 25 years old, a citizen of the U.S. for past seven years, & live in the district from which they are elected. Number of representatives is determined by the state population (Virginia Plan).

Senate = 100 members
6-year term
Senators: Must be 30 years old, a citizen of the U.S. for the past 9 years, & live in the state from which they are elected. Two senators from each state (New Jersey Plan).
Iowa = 8 Electoral Votes, 6 House of Representatives, 2 Senators.

Article II

Executive Branch - Enforces Laws & Veto Power

President: Must be 35 years old, a natural born citizen of the U.S., have lived in the U.S. the last 14 years; 4-year term, may be re-elected for a total of two, 4-year terms; 10 years total. Current, George Bush.

Vice President: Same qualifications as President. Head of Senate. Current, Dan Quayle.

Cabinet Advisors: Appointed by the President and approved by the Senate.

Article III

Judicial - Interprets Laws
Highest court system - Supreme Court
Appointed by the President and approved by the Senate
1 Chief Justice & 8 Associate Justices, life term
Other Federal courts determined by Congress

Other

Preamble = Introduction to the Constitution
Constitution = Law of the Land
Amendments 1-10 - Bill of Rights
Amendment 1 = Freedom of Speech, Religion, Press & Assembly.

SCIENCE–DATABASE INTERDISCIPLINARY PROJECT

CONTRIBUTOR:
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Objectives:

- The student will use a database to organize information from an interdisciplinary subject area.

Procedures:

- Obtain a copy of the Periodic Chart of the Elements which contains each element's symbol, atomic weight, atomic number, and electronic configuration. (Note: Available in encyclopedias.)
- Distribute the handouts: **DATABASE PROJECT INSTRUCTIONS**
  PERIODIC CHART OF ELEMENTS
- Follow steps in handout.

Materials needed:

- Handout: **DATABASE PROJECT INSTRUCTIONS**
- Periodic Chart of the Elements large enough for students to read.
- Database software (Note: This project was written using AppleWorks 3.0; however, it could be adapted easily to dBase and Microsoft Works.)

Comments:

- Used as an interdisciplinary unit for 8th grade students after they have knowledge of the periodic table.

Solution:

```
File:   ELEMENTS 3
Report: ELEMENTS           ATOMIC WEIGHT     ATOMIC NUMBER     ELEC.  CONFIGURATION      FAMILY
NAME

Hydrogen                   1.00797             1                                         I A
Helium                     4.0026              2               2                         0
Lithium                    6.939               3               2-1                       1 A
Beryllium                  9.0122              4               2-2                       II A
Boron                      10.811              5               2-3                       III A
Carbon                     12.011              6               2-4                       IV A
Nitrogen                   14.0067             7               2-5                       V A
Oxygen                     15.9994             8               2-6                       VI A
Fluorine                   18.9984             9               2-7                       VII A
Neon                       20.183              10              2-8                       0
Sodium                     22.9898             11              2-8-1                     I A
Magnesium                  24.312              12              2-8-2                     II A
Aluminum                   26.9815             13              2-8-3                     III A
Silicon                    28.086              14              2-8-4                     IV A
Phosphorus                 30.9738             15              2-8-5                     V A
Sulphur                    32.064              16              2-8-6                     VI A
Chlorine                   35.453              17              2-8-7                     VII A
Argon                      39.948              18              2-8-8                     0
Potassium                  39.102              19              2-8-8-1                   I A
Calcium                    40.08               20              2-8-8-2                   II A
```

DATABASE PROJECT INSTRUCTIONS

Using the handout (PERIODIC CHART OF THE ELEMENTS.), create a database with the following categories:

NAME
ATOMIC WEIGHT
ATOMIC NUMBER
ELEC. CONFIGURATION
FAMILY

STEP BY STEP PROCEDURE

1.Load AppleWorks and proceed to the Main Menu:
Select 1: Add Filed to the Desktop
Select 4: Data Base
Select 1: From scratch
2.Key in a file name for your database. (Choose a name that will be easy for you to identify.)
3.Follow the instructions on the bottom of the screen, then press return.
4.Push: OPEN-APPLE 1 to blank out the words, Category 1.
5.Key in the name of your five categories listed above pressing return after each entry.
6.After keying in the fifth category (FAMILY), press escape and the space bar as the screen instructs.
7.You are ready to enter information into your database: Go down the list of 20 elements, one at a time, and enter information for each item into the five categories.

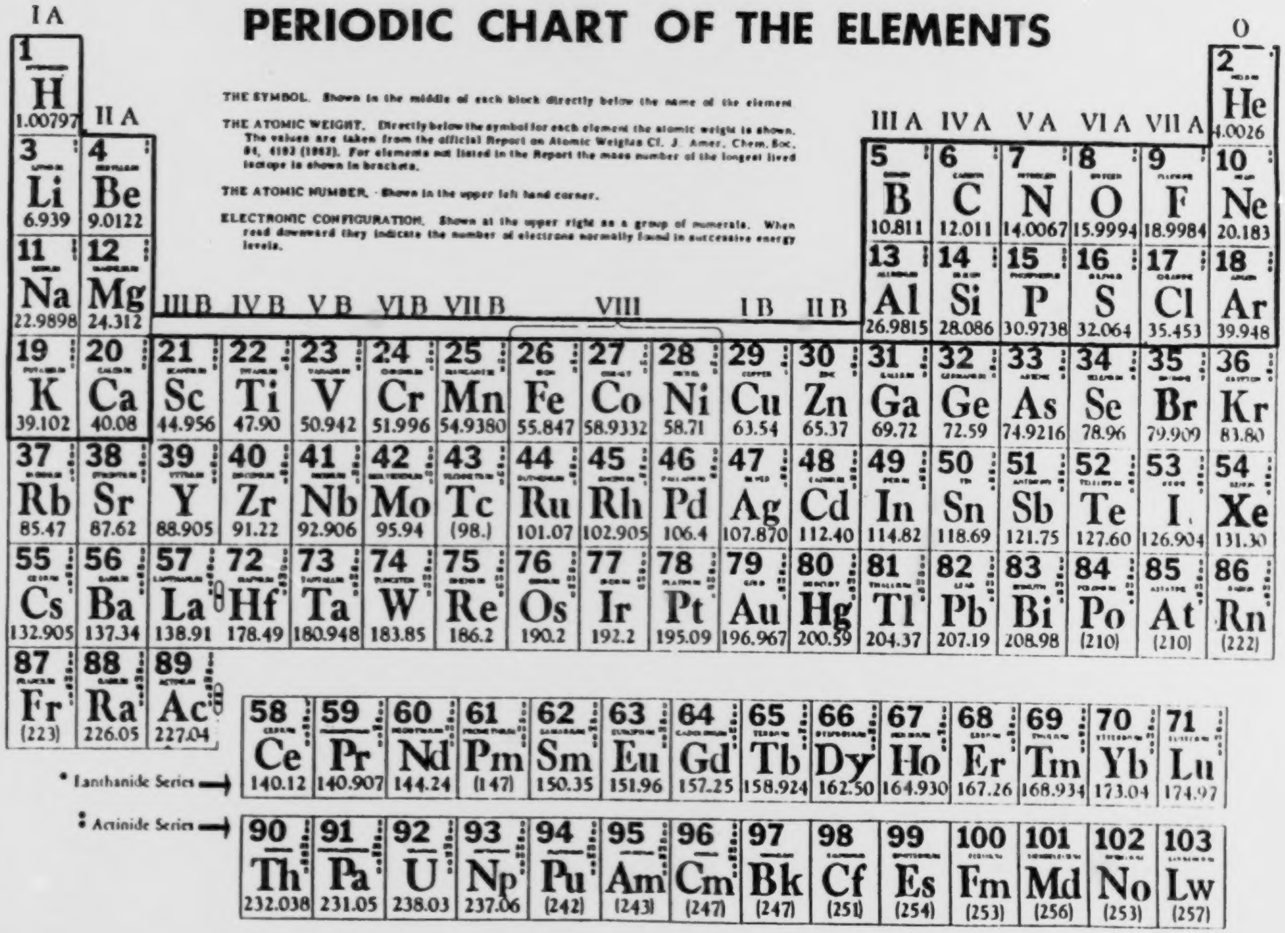
Reminder: Always SAVE your file when you make changes, and always SAVE your file at the end of each class time.

PRINTING INSTRUCTIONS

1. Load AppleWorks and proceed to the Main Menu:
   Select 1: Add files to the Desktop.
   Select 2: From the current disk, place your data disk in the disk drive and press return.
2. Choose the database file you named (ON CHART OF ELEMENTS) and press return.
3. When your file appears on the screen, use OPEN-APPLE P to print your file.
4. From the new screen select 2: Create a new "tables" format.
5. From the next screen select: From scratch and give your "table format" a name.
6. From the new screen you can widen your columns using the OPEN-APPLE KEY & THE ARROW KEYS. Make each of your five columns wide enough to print out all information.
7. After you have made your columns wider, you can also arrange your "PERIODIC ELEMENT" category in any order that you wish. Place your cursor on whichever category you want to arrange and push OPEN-APPLE A. Arrange in alphabetical order or in a numbered order from smallest to largest to smallest.
8. You should now be back to the screen that reads: "REPORT FORMAT." Now push: OPEN-APPLE P and choose the name of your printer.
9. Key in the date as directed.

10. Make sure your printer is ready and depress return to print.
11. Check your report carefully. Are your columns wide enough to include all information?

SAMPLE PERIODIC CHART



PERIODIC CHART OF THE ELEMENTS

THE SYMBOL. Shown in the middle of each block directly below the name of the element

THE ATOMIC WEIGHT. Directly below the symbol for each element the atomic weight is shown. The values are taken from the official Report on Atomic Weights Cf. J. Amer. Chem. Soc. 84, 4192 (1962). For elements not listed in the Report the mass number of the longest lived isotope is shown in brackets.

THE ATOMIC NUMBER. Shown in the upper left hand corner.

ELECTRONIC CONFIGURATION. Shown at the upper right as a group of numerals. When read downward they indicate the number of electrons normally found in successive energy levels.

	IA	IIA	IIIB	IVB	VB	VIB	VIIB	VIII	VIII	VIII	IB	IIB	IIIA	IVA	VA	VIA	VIIA	0
1	1 H 1.00797																	2 He 4.0026
2	3 Li 6.939	4 Be 9.0122											5 B 10.811	6 C 12.011	7 N 14.0067	8 O 15.9994	9 F 18.9984	10 Ne 20.183
3	11 Na 22.9898	12 Mg 24.312											13 Al 26.9815	14 Si 28.086	15 P 30.9738	16 S 32.064	17 Cl 35.453	18 Ar 39.948
4	19 K 39.102	20 Ca 40.08	21 Sc 44.956	22 Ti 47.90	23 V 50.942	24 Cr 51.996	25 Mn 54.9380	26 Fe 55.847	27 Co 58.9332	28 Ni 58.71	29 Cu 63.54	30 Zn 65.37	31 Ga 69.72	32 Ge 72.59	33 As 74.9216	34 Se 78.96	35 Br 79.909	36 Kr 83.80
5	37 Rb 85.47	38 Sr 87.62	39 Y 88.905	40 Zr 91.22	41 Nb 92.906	42 Mo 95.94	43 Tc (98.)	44 Ru 101.07	45 Rh 102.905	46 Pd 106.4	47 Ag 107.870	48 Cd 112.40	49 In 114.82	50 Sn 118.69	51 Sb 121.75	52 Te 127.60	53 I 126.904	54 Xe 131.30
6	55 Cs 132.905	56 Ba 137.34	57 La 138.91	72 Hf 178.49	73 Ta 180.948	74 W 183.85	75 Re 186.2	76 Os 190.2	77 Ir 192.2	78 Pt 195.09	79 Au 196.967	80 Hg 200.59	81 Tl 204.37	82 Pb 207.19	83 Bi 208.98	84 Po (210)	85 At (210)	86 Rn (222)
7	87 Fr (223)	88 Ra 226.05	89 Ac 227.04															

* Lanthanide Series →	58 Ce 140.12	59 Pr 140.907	60 Nd 144.24	61 Pm (147)	62 Sm 150.35	63 Eu 151.96	64 Gd 157.25	65 Tb 158.924	66 Dy 162.50	67 Ho 164.930	68 Er 167.26	69 Tm 168.934	70 Yb 173.04	71 Lu 174.97
‡ Actinide Series →	90 Th 232.038	91 Pa 231.05	92 U 238.03	93 Np 237.06	94 Pu (242)	95 Am (243)	96 Cm (247)	97 Bk (247)	98 Cf (251)	99 Es (254)	100 Fm (253)	101 Md (256)	102 No (253)	103 Lw (257)

(Charts included for illustration purposes only. Charts of full size are available in chemistry textbooks and references found in most libraries.)

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ASSIGNMENT ORGANIZER AND ANALYSIS

CONTRIBUTOR
Ken Shealy
North Cobb High School
Kennesaw, GA 30144

Objectives:

- The student will create a database, maintain data, analyze data, and prepare reports using the data collected.

Procedures:

- Discuss database requirements and explain the way in which the database will be used as a tool for keeping track of assignments and individual progress.
- Instruct students as to the creation of the database structure and the field types required to perform the analysis needed.
- Have students prepare a report at the end of the semester consisting of assignments completed, scores on each assignment, and semester average.

Materials needed:

- Database software

Comments:

- The database organizer is an extremely effective way for students to keep track of weekly assignments, maintain grades on weekly assignments, and monitor individual progress during the semester.
- The database should be created at the beginning of the term. All assignments for the term should be entered into the database, along with the weight of each assignment and the date assignment is due. The student should check the database periodically for assignments deadlines and to update grades at the completion of each assignment.
- This project is most effective when used with a point system in which each assignment has a pre-determined point value.

Example:

- The following point system is used in an introductory programming course:

Course Title: Introduction to Computer Programming

Topics: DOS, Basic Programming, Database Management

GRADING			pts./%
Test	25 pts./%	Test 1	5
		Test 2	5
		Test 3	5
		Test 4	5
		Test 5	5
Programs	25 pts./%	Program 1	5
		Program 2	5
		Program 3	5
		Program 4	5
		Program 5	5
Classwork	10 pts./%	Classwork 1	1
Homework		Classwork 2	1
Quiz		Classwork 3	1
		Classwork 4	1
		Homework 1	1
		Homework 2	1
		Quiz 1	1
		Quiz 2	1
		Quiz 3	1
		Quiz 4	1
Project	10 pts./%	Project	10
Final Exam	20 pts./%	Final	20
Total	100 pts./%		100

DATABASE STRUCTURE

```
Structure for database:  B:assign.dbf
Number of data records:  23
Date of last update:
Field  Field Name     Type        Width         Dec
 1     ASSIGN_NUM     Numeric        2
 2     ASSIGN_TYP     Character     10
 3     ASSIGNMENT     Character     25
 4     POS_SCORE      Numeric        2
 5     SCORE          Numeric        2
 6     DUE_DATE       Date           9
 7     DUE_MONTH      Character     10
 8     DUE_DAY        Character      2
 9     DUE_YEAR       Character      2
10     ASSIGN_COM     Logical        1
11     ASSIGN_INF     Memo          10
** Total **                         75
```

Field Contents

1.	ASSIGN_NUM	ASSIGNMENT NUMBER
2.	ASSIGN_TYP	ASSIGNMENT TYPE (Test, Quiz, etc.)
3.	ASSIGNMENT	ASSIGNMENT (Identifies the assignment)
4.	POS_SCORE	POSSIBLE SCORE (Gives the weight of the assignment)
5.	SCORE	SCORE (Student's score on the assignment)
6.	DUE_DATE	DUE DATE (Date when assignment is due)
7.	DUE_MONTH	DUE MONTH (Month when assignment is due)
8.	DUE_DAY	DUE DAY (Day when assignment is due)
9.	DUE_YEAR	DUE YEAR (Year when assignment is due)
10.	ASSIGN_COM	ASSIGNMENT COMPLETED (Filled when assignment is completed)
11.	ASSIGN_INF	ASSIGNMENT INFORMATION (Details on completing assignment)

Sample Check of Monthly Assignment:

```
.DISPLAY ASSIGNMENT,DUE_DATE, ASSIGN_TYPE FOR DUE_MONTH =
"JANUARY"
Records#   ASSIGNMENT                  DUE_DATE      ASSIGN_TYPE
    20     QUIZ SECTION VI             01/11/1992    QUIZ
    21     VOCATIONAL COMPETENCY       01/11/1992    VOC_COMP
    22     SEMESTER REPORT             01/14/1992    PROJECT
    23     FINAL EXAM SECTIONS 5-7     01/18/1992    FINAL
```

SAMPLE SEMESTER REPORT:

```
Page No. 1
01/01/XX                        FALL SEMESTER
                  INTRODUCTION TO COMPUTER PROGRAMMING

                        STUDENT:  ANGELA MELTON

ASSIGN # ASSIGNMENT                          DATE DUE        SCORE

    1   READ CHAPTER 1 P. 4-32               08/31/91            1
    2   QUIZ - CHAPTER 1                     08/31/91            1
    3   READ CHAPTER 2 P. 34-48              09/03/91            1
    4   "YOUR TURN" P. 46                    09/03/91            0
    5   "YOUR TURN" P. 50-58                 09/07/91            0
    6   TEST 1 CH. 1 & 2                     09/11/91            5
    7   "YOUR TURN" P. 427-456               09/14/91            0
    8   "YOUR TURN" P. 462-487               09/17/91            1
    9   TEST 2 CHAPTERS 14 & 15              09/25/91            5
   10   CLEAR,WAIT,TEXT..ENDTEXT             10/12/91            5
   11   STORE TO,ACCEPT,INPUT                10/19/91            0
   12   NEW,RUN,SAVE,LOAD,LIST               10/26/91            5
   13   TEST  SECTION I - BASIC              10/26/91            4
   14   REM,PRINT,END,INPUT,READ             11/16/91            4
   15   TEST SECTION 2 & 3 BASIC             11/16/91            3
   16   GOTO,IF,GOSUB,ON/GOSUB               11/30/91            5
   17   TEST SECTION IV  BASIC               11/30/01            4
   18   QUIZ SECTION 5                       12/07/91            0
   19   QUIZ SECTION VI                      12/14/91            1
   20   QUIZ SECTION VI                      01/11/92            1
   21   VOCATIONAL COMPETENCY                01/11/92            8
   22   SEMESTER REPORT                      01/14/92            8
   23   FINAL EXAM SECTIONS 5-7              01/18/92           15

*** Total ***                                                   77
```

IDEAS FOR DATABASE ASSIGNMENTS

CONTRIBUTOR
Linda Henson Wiggs
Southeast Missouri State University
Cape Giradeau, MO 63701

My microcomputer applications class involves software for word processing, spreadsheets, database, and some desktop publishing. After students learn how to use the software, I supply practical applications for refining their application skills. Some of the database applications I find beneficial include the following:

- Database of students in class: On a sheet of paper have students write their names, street address, city, state, zip code, major, high school attended, year in school, and gender. This sheet is photocopied and becomes the source document for a database assignment. Students manipulate the data to prepare various reports. In addition to practice in database applications, this activity helps students learn the names of other students and provides phone numbers so they can call one another if they have questions about assignments.

- Database of area motels and hotels: Students use phone books and hotel and motel guides to gather information for their databases. In addition to hotel or motel names, addresses, phone numbers, and room rates, students add other information such as availability of a convention center, pool, lounge area, secretarial services, shops and general location. Students are then asked to manipulate the database to produce various reports, such as a listing of all hotels located in a specific area with convention facilities. This assignment helps students become better informed about accommodations, services and costs.

- Database of books: Students prepare a database of the books they use in their classes. They may use any personal reference books or books they check out of the library for reference purposes. Students gather such information as book titles, authors, publishers, copyright date, publication cities, and index types. Students manipulate the data to produce various reports. This assignment helps students become more aware of the general information about the books they use.

- Database of houses for sale: Students use their local newspapers to prepare a database of houses listed for sale on a given date. Information recorded about each listing includes the location, price, bedrooms, fireplaces, garage, city, listing realtor, and other pertinent information, such as pool. Students use the database to prepare various reports. This assignment is sometimes a revealing exercise for students who have no conception of housing prices.

Comments:

- Most of the databases are prepared as outside assignments. Because many students live in different communities, they often work with different source data, which encourages students to do their own work. Class time is used to manipulate databases and prepare needed reports. Students may be asked to print a particular report or to share information contained in one of their reports.

- Students seem eager to prepare "real-life" assignments. They enjoy comparing their results. The general information they learn from the assignments helps them better understand their economic communities.

Editor's Comment:

- Although these assignments are used at the collegiate level, they could be adapted easily to other educational levels. At the secondary level, the teacher may need to consider allowing class time to discuss the database in detail and to enter data.

Graphics

Category 12D

INTEGRATING PAINT GRAPHICS INTO A TEXT DOCUMENT

CONTRIBUTOR:
Ivan Wallace
East Carolina University
Greenville, NC 27858

Objectives:

- The student will use a graphical environment to create a graphic image using a paint-type program and integrate the graphic into a text document.

Procedures:

- Explain to the students that they will first use a paint-type program to create the graphic image and save it in a file. Then they will copy the image to the clipboard so that they can paste the image into a word processing document to integrate the text with the graphics. Encourage students to create a simple picture or piece of "art." Save the graphic to a disk file.

- Use the pick tool, scissors, or other selecting tool to select the artwork from the canvas and copy it to the clipboard by clicking **Edit** and **Copy**. After copying the graphic to the clipboard, either close the paint program or minimize it.

- Load the word processing software or maximize it if it is already running. Immediately paste the graphic into the document to ensure that it is not lost accidently from the clipboard. Then center the image using the center command or icon. After the transfer has been successful, immediately save the document file.

- Place the cursor above the graphic and compose a letter or memo to the teacher explaining the process that they just completed.

Materials needed:

- IBM/IBM compatible computer with Microsoft Windows software or Macintosh computer

- Microsoft Write, Word for Windows, or Microsoft Works for Windows software

- Graphic Printer

Comments:

- This exercise allows the students to use their creative abilities and composition skills by creating the graphic and then explaining the integration process to the teacher in the letter or memo.
- You can quickly walk the students through the process by having them draw and successfully transfer a simple box or circle. Then they can concentrate on a more complex graphic. The document will be more attractive if the graphic is sandwiched between paragraphs.

Solution:

- April 15, 19--

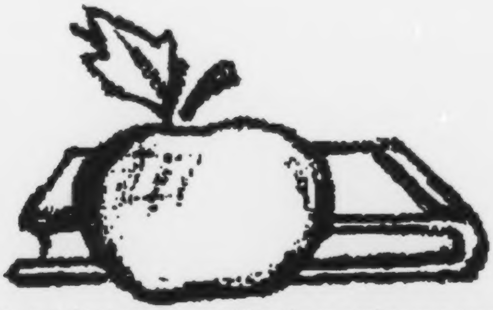
Dr. Robert Stallings
BVTE Department
East Carolina University
Greenville, NC 27858

Dear Dr. Stallings:

Subject: Integrating paint graphics with a text document

This letter is an example demonstrating how easy it is to integrate a graphic image into a text document using the Microsoft Windows graphical environment.

Below is an apple that was created using Paintbrush.



After creating the graphic, the final step in making the transfer was to copy the drawing to the clipboard by selecting the drawing with the pick tool and then clicking **Edit** and **Copy**.

After the graphic was copied to the clipboard, I opened a new document in the word processor and immediately clicked **Edit** and **Paste** to paste the graphic into this document. Finally, I created the text for this letter and sandwiched the graphic between the second and third paragraphs.

Sincerely,

Judy Smith
ASIP 3500 Student

INTEGRATING ANALYTICAL GRAPHICS INTO A TEXT DOCUMENT

CONTRIBUTOR:
Ivan Wallace
East Carolina University
Greenville, NC 27858

Objectives:

- The student will use a graphical environment to create a chart or graph using a spreadsheet program and integrate the graphic image into a text document.

Procedures:

- Explain to the students that they will first use the spreadsheet program to create the graphic image and save it in a file. Then they will copy the image to the clipboard so that the graphic image can be pasted into a word processing document to integrate the text with the graphics. Encourage students to create a simple chart or graph by taking a quick survey of the students' eye color to use as data. Type the colors in column A and the respective numbers in column B. Select the cells that have data in them and then click **File** and New. Then select **Chart.** Save the graphic to a disk file.

- Click **Chart** and **Select Chart** to select the graphic for transfer. Then copy the graphic to the clipboard by clicking **Edit** and **Copy**. After copying the graphic to the clipboard, either close the spreadsheet program or minimize it.

- Load the word processing program or maximize it if it is already running. Immediately paste the graphic into the document to insure that it is not lost accidently from the clipboard. Then center the image using the center command or icon. After the transfer has been successful, immediately save the document file.

- Place the cursor above the graphic image and compose a letter or memo to the teacher explaining the process that was just completed.

Materials needed:

- IBM/IBM compatible computer with Microsoft Windows software or Macintosh computer

- Microsoft Write, Word for Windows, or Microsoft Works for Windows software

- Graphic Printer

Comments:

- You can use all kinds of data to quickly generate a chart that is meaningful to the students. You can chart their hair color, their class status (Soph, Jr., Sr.,) etc. Just keep the data sets simple and use no more than three or four items initially.

Solution:

- April 25, 19–

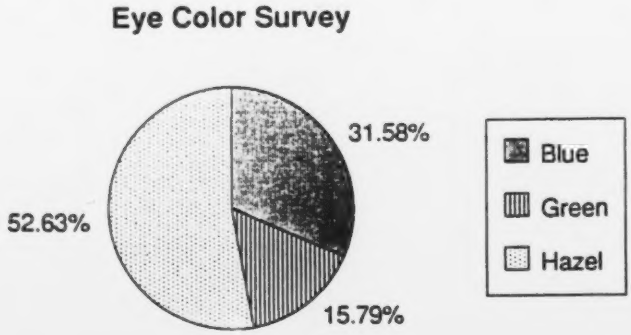
Dr. Robert Stallings
BVTE Department
East Carolina University
Greenville, NC 27858

Dear Dr. Stallings:

Subject: Integrating analytical graphics with a text document

This letter is an example demonstrating how easy it is to integrate a graphic image into a text document using the Microsoft Windows graphical environment.

Below is a chart that was created using Microsoft Excel. As you can see, the chart shows the percentage of students in the class with various colors of eyes. We took a survey in class to acquire the data that was used to create the chart.



After entering the data into the spreadsheet, I created the chart by clicking **File New** and selected **chart**. By default, Excel created a bar chart; so I clicked **Galley** and then clicked **Pie** to indicate that I wanted a pie chart. After creating the pie chart, I clicked **Chart** and **Add Legend** so that the chart would have a legend showing the various percentages of students with respective eye colors. Then I clicked Chart and **Attach Text** and selected **Chart Title** so that I could add a title to the chart. Finally, I clicked **Chart** and **Select Chart** so that the entire chart could be copied to the clipboard. The final step in making the transfer was to copy the chart to the clipboard by clicking **Edit** and **Copy**.

After the chart was copied to the clipboard, I opened a new document in the word processor and immediately clicked **Edit** and **Paste** to paste the chart into this document. Finally, I created the text for this letter and sandwiched the chart between the second and third paragraphs.

Sincerely,

Judy Smith
ASIP 3500 Student

Integrated Software

Category 12E

SPREADSHEET/WORD PROCESSING INTEGRATION

CONTRIBUTOR:
Claudia L. Orr
Karin M. Stulz
Northern Michigan University
Marquette, MI 49855

Objectives:

- The student will incorporate a file from an electronic spreadsheet program into a text document created in a word processing program.

Procedures:

- Distribute handout: **PRACTICE EXERCISES**
- Explain the method for printing a spreadsheet to a file for the software you are using. Have students complete the spreadsheet shown on the handout.
- Complete the memo on the handout using word processing software.
- Explain the method for retrieving the spreadsheet into a word processing document. Instruct the students to incorporate the spreadsheet into the text document and print a hard copy.

Materials needed:

- Electronic spreadsheet software program
- Word processing software program
- Handout: **PRACTICE EXERCISES**

Terminology:

- Printing to a File - Saving a spreadsheet on a disk in a format that can be used in a different software program.

Comments:

- This lesson has been taught using Lotus 1-2-3 (Lotus Development Corporation, 55 Cambridge Parkway, Cambridge, MA 02142) as the spreadsheet program and IBM DisplayWrite 4 (International Business Machines Corporation, P.O. Box 152560, Irving, TX 75015) as the word processing program. This exercise however, can be adapted for use with a variety of spreadsheet and word processing software programs.

Solution:

MEMO TO:	Melissa Sanchez Payroll Supervisor
FROM:	Matthew Williams Labor Coordinator
DATE:	April, 4, 19--
SUBJECT:	PAYROLL FOR WEEK ENDING MARCH 29, 19--

Below is the payroll information for the week ending March 29, 19--.

ABC LANDSCAPING
Week Ending March 29, 19--

Employee Name	Hourly Rate	Hours Worked	Weekly Pay
Anderson, Natasha	$4.50	20	$ 90.00
Brown, Katie S.	$4.75	20	$ 95.00
Bruner, Mindy T.	$4.50	15	$ 67.50
Carlson, Sam K.	$4.50	18	$ 81.00
Finch, William A.	$4.75	14	$ 66.50
Kim, Sun-Lee	$4.75	17	$ 80.75
Loren, Susan P.	$5.00	20	$100.00
Perez, Juanita	$5.00	16	$ 80.00
Richards, Terry	$4.75	18	$ 85.50
Rodriguez, Manuel	$5.00	15	$ 75.00

Please note the new names on the list. These part-time employees began working last week. As you can see, I have indicated their negotiated hourly rate. Call me at Extension 4015 if you have questions.

xx

PRACTICE EXERCISES

1. **SPREADSHEET EXERCISE** (Use spreadsheet software.)

ABC LANDSCAPING
Week Ending March 29, 19--

Employee Name	Hourly Rate	Hours Worked	Weekly Pay
Anderson, Natasha	$4.50	20	$ 90.00
Brown, Katie S.	$4.75	20	$ 95.00
Bruner, Mindy T.	$4.50	15	$ 67.50
Carlson, Sam K.	$4.50	18	$ 81.00
Finch, William A.	$4.75	14	$ 66.50
Kim, Sun-Lee	$4.75	17	$ 80.75
Loren, Susan P.	$5.00	20	$100.00
Perez, Juanita	$5.00	16	$ 80.00
Richards, Terry	$4.75	18	$ 85.50
Rodriguez, Manuel	$5.00	15	$ 75.00

2. **WORD PROCESSING EXERCISE** (Use word processing software.)

MEMO TO: Melissa Sanchez
Payroll Supervisor

FROM: Matthew Williams
Labor Coordinator

DATE: April 4, 19--

SUBJECT: PAYROLL FOR WEEK ENDING MARCH 29, 19--

Below is the payroll information for the week ending March 29, 19--.

(INSERT PAYROLL SPREADSHEET)

Please note the new names on the list. These part-time employees began working last week. As you can see, I have indicated their negotiated hourly rate. Call me at Extension 4015 if you have questions.

(document code)

USING INTEGRATED SOFTWARE

CONTRIBUTOR
Jean Ryburn
Rolla High School
Rolla, MO 65401

Objectives:

- The student will create individual database files, spreadsheet files, and graphics and then integrate the information into a word processing document.

Procedures:

- Distribute handout: **INTEGRATION EXERCISE 1** and explain the steps as outlined in the handout.

  Note: On this exercise, square brackets [ ] are notes to the instructor. Parenthesis ( ) are notes included on handouts for students. Teachers may include detailed instructions on exercises if they feel they are needed.

- Distribute handouts for exercises 2 and 3 after students have completed the first exercise.

Materials needed:

- Handout: **INTEGRATION EXERCISES 1, 2, 3.**
- IBM or IBM-compatible microcomputer with graphics capabilities.
- Graphics printer.
- Microsoft Works software.

Comments:

- Some terms and software commands listed are specific to Microsoft Works. These exercises could be completed with Appleworks and Apple computers as well.
- Source of data is 1990 World Almanac and Book of Facts. Exercises can be completed by most students in one class period--some in as little as 30 minutes.

Solution:

- Integration Exercise 1 is provided as an example.

DISEASE REPORT January 5, 1992 Your Name

During the annual meeting in Chicago, several speakers were heard. The names and addresses of these distinguished doctors are listed below for your information and future reference.

Doctor	Hospital	City/State
Dr. Richard Willa	Mercy Medical	Chicago, IL
Dr. Ann Hills	Baker Burns Hosp.	St. Louis, MO
Dr. Walter High	Seymore General	Dayton, OH
Dr. Alan Right	Cancer Research Hosp.	Peoria, IL

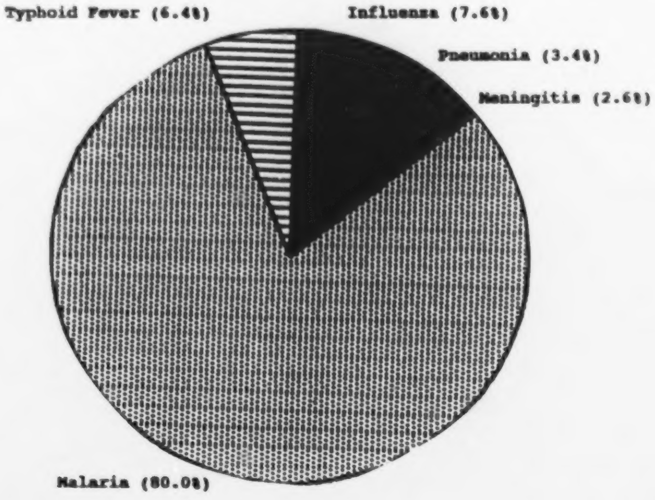
Of all the data that were presented, the most outstanding were the data on strides being made in the United States and developing nations. The top five diseases in the world today according to the information given at the seminar are as follows:

DISEASE PREVENTION
UNITED STATES AND DEVELOPING NATIONS

DISEASE	CASES PER YEAR	DEATHS	AVERAGES
Influenza	19,000,000	28,000	0.15 %
Pneumonia	8,500,000	7,500	0.09 %
Meningitis	6,518,000	600,000	9.22 %
Malaria	200,000,000	2,000,000	1.00 %
Typhoid Fever	16,000,000	500,000	3.13 %
TOTAL	250,018,000	3,136,300	1.25 %

Malaria is by far the most common disease in the world today. You get a better picture of this when you look at the data as a pie chart.

DISEASE PREVENTION
United States and Developing Nations



INTEGRATION EXERCISE 1

(Instructions are in italics.)

STEP 1 - Open a blank spreadsheet. Use the following information to complete it. Calculate the Average [divide deaths by cases per year] and the total cases and deaths. [Average of total is optional].

DISEASE PREVENTION
UNITED STATES AND DEVELOPING NATIONS

DISEASES	CASES PER YEAR	DEATHS	AVERAGE
Influenza	19,000,000	28,000	
Pneumonia	8,500,000	7,500	
Meningitis	6,518,000	600,800	
Malaria	200,000,000	2,000,000	
Typhoid Fever	16,000,000	500,000	
TOTAL			

Format the cases and deaths with Format, Comma, No Decimals. Format the average with Percent with 2 decimals. Highlight the diseases and cases per year for each disease. Exclude AVERAGE, TOTAL, blank areas, and headings. [A6 through B10 is usually the appropriate area but it depends on spacing].

Create a new chart [Alt, View, New Chart]. Escape and add the following titles [Alt, Data, Titles].

Title: DISEASE PREVENTION
Subtitle: United States and Developing Nations

Change the chart to a pie chart and view it. [Alt, Format, Pie, Alt, View, 1]. Save this under the title ILL but do not close the file.

STEP 2 - Open a blank database file over the spreadsheet. [Alt, File, Create New File, Database]. Enter the following fields:

Doctor:
Hospital:
Address:
City/State:
Zip:

Enter the following data by keying on the lines. Tab to get to the next line or record [representative data, not actual]:

Dr. Richard Willa, Mercy Medical, #7 Brookfield, Chicago, IL 61501
Dr. Ann Hills, Baker Burns Hosp., 123 Waite Rd., ST. Louis, MO 65407
Dr. Walter High, Seymore General, 875 Kitty Hawk, Dayton, OH 34920
Dr. Alan Right, Cancer Research Hosp., 19230 North 8th, Peoria, IL 61667

Check your keying in list view [Alt, View, List] then create a report [Alt, View, New Report] keep the names, hospitals, and city/state columns only on the report. [Highlight columns to be deleted and use Alt, Edit, Delete Row/Column, Column, enter]. Save this database but do not close it.

__STEP 3__ - Open a word processing document [Alt, File, Create New File, New Word Processor] and set side margins to 1 inch. If you want the document on one page, set top and bottom margins to .5 and be sure there are no extra spaces before tables. You may need to adjust spaces when inserting the database or spreadsheet, use word processing technique to do this. Key the following document:

DISEASE REPORT CURRENT DATE YOUR NAME

During the annual meeting in Chicago, several speakers were heard. The names and addresses of these distinguished doctors are listed below for your information and future reference.

(Insert the report you created in the database) [Alt, Window, 2, highlight all the report by F8 and using arrows to highlight the column headings and records. Alt, Edit, Copy (NOT MOVE), Alt, Window, 3, enter].

Of all the data that was presented, the most outstanding was the data on strides being made in the United States and developing nations. The top five diseases in the world today according to the information given at the seminar are as follows:

(Insert spreadsheet data by copying data from spreadsheet view.)

Malaria is by far the most common disease in the world today. You get a better picture of this when you look at the data as a pie chart.

(Insert Pie Chart from Spreadsheet Chart screen) [Alt, Edit, Insert Chart, down arrow to mark the proper spreadsheet, right arrow then down arrow to make the chart desired, enter]. (A notation will appear on the screen, NOT THE CHART.)

(Check spelling) [Alt, Options, Check Spellings]. (Preview the document) [Alt, Print, Preview, page up or down to view both pages] (then print one copy of the completed document) [Alt, Print, enter].

INTEGRATION EXERCISE 2
(Instructions are in italics.)

Open a blank spreadsheet. Enter the following data from the 1988 Uniform Crime Report by the FBI.

1988 ARRESTS
AGE

CRIME	UNDER 15	15 TO 18	18 TO 21	21 TO 25	TOTAL
MURDER	172	1342	2200	2355	
FORCIBLE RAPE	1123	2249	2587	3651	
ROBBERY	6066	16469	17351	19006	
BURGLARY	9719	23050	27815	39690	
LARCENY	137986	171883	136143	126714	
AUTO THEFT	13566	38272	22632	17220	
TOTAL					

Calculate the totals and set for comma format with no decimals. Highlight the crime, headings, and four age columns without the totals. Create a new chart. Change the chart to a line graph. Add a Title ARRESTS and a subtitle UNDER AGE 25, X-axis CRIME, Y-axis NUMBER OF ARRESTS. Change the title font if you wish. View the line graph. Save the spreadsheet under B:CRIME. Do not close it.

Key the following document and insert the data and graph where designated.

TO: Mr. John Walker
FROM: [Your Name]
SUBJECTS: [Information on Arrests]
DATE: [Today's date]

Below you will find the information you asked me to find for you. The total number of arrests for 1988 for the seven crimes listed is 839,261. They are broken down as follows by age group.

[Insert entire spreadsheet]

The crime of theft seems to be the most popular for these age groups as you can easily see in the following line graph.

[Insert line graph]

INTEGRATION EXERCISE 3

(Instructions are in italics.)

Enter the following data into a blank spreadsheet. Calculate the column totals for the two years and the percent of change from 1987 to 1988 (the first two will be positive changes.) [For Cocker Spaniels it will be = (B5-C5)/C5 or 3.3%]. The percent should be formatted for percent with one decimal.

TOP 20 AMERICAN KENNEL
CLUB REGISTRATIONS

BREED	1988	1987	% CHANGE
Cocker Spaniels	108720	105236	
Labrador Retrievers	86446	81987	
Poodles	82600	85400	
Golden Retrievers	62950	60936	
German Shepherd	57139	57612	
Chow Chow	50781	49096	
Rottweilers	42748	36162	
Beagles	41983	41972	
Dachshunds	41921	40031	
Miniature Schnauzers	41558	41462	
Shih Tzu	38829	36519	
Shetland Sheepdogs	38730	37616	
Yorkshire Terriers	36040	36033	
Pomeranians	30516	27911	
Lhasa Apsos	30194	31685	
Doberman Pinschers	23928	28783	
Chihuahuas	23487	21398	
Siberian Huskies	21430	20708	
Basset Hounds	21423	21082	
Boxers	20604	19553	
TOTAL			

Highlight the top five breeds, headings, and the figures for each of these five breeds for 1988 and 1987, do not include the % of change. Create a bar chart with this data. Add heading: TOP FIVE and a subheading: KENNEL CLUB BREEDS. Add X-axis: BREED and Y-Axis POPULATION. View the bar chart then save the spreadsheet as B: DOGS. It is very important that you save the spreadsheet NOW!

Key the following memo into a blank word processing screen.

TO: Mrs. Jane Smith
FROM: [Your name]
DATE: [Current Date]
SUBJECT: Popularity in Dog Breeds

The following data appeared in the DOGS magazine as being the 1988 top 20 dog breeds as far as population of the dog is concerned.

[Insert the entire spreadsheet]

The following dog breeds showed losses:

[Copy the spreadsheet again, then delete rows of all breeds who had a positive change in the percent. ONLY KEEP THOSE WITH NEGATIVE CHANGES.]

Changes in the population for the top five breeds are shown on the following bar chart. [Insert bar chart here].

USING INTEGRATED SOFTWARE TO DEVELOP A BUSINESS PERIODICALS LISTING AND REPORT

CONTRIBUTOR:
Debra Wendt
Milwaukee College of Business
Milwaukee, WI 53203

Objective:

- The students will use integrated software to develop a database and prepare a report describing the database.

Procedures:

- Have students plan a database for the business periodicals in your school library.
- Use the following fields as suggestions for the database:

Title Publisher Time Cost Audience Purpose

- Sort the database by title in alphabetical order and sort by cost in ascending numerical order. Save the database.
- Have students create a word processing document using a memorandom format of their choice.
- Write a summary paragraph(s) that compares and contrasts the various periodicals.
- Integrate the database with the word processing document.
- Print the integrated file.

Terminology:

- The category "Time" refers to weekly, monthly, bi-monthly, quarterly, or annually.

Desktop Publishing

Category 12F

DESIGNING AND PRODUCING PERSONAL BUSINESS CARDS

CONTRIBUTOR:
Charlotte D. Cubbler
Boyertown Area Senior High School
Boyertown, PA 19512

Objectives:

- The student will design and create a business card using desktop publishing.

Procedures:

- Have students collect business cards from friends and business acquaintances. Paste the cards on the "Sample Cards" area of the handout.

- Have students critique the business cards. Critical analysis should involve such areas as layout, design, color, print type and graphics.

- Have each student redesign, on a plain piece of paper, at least one of the cards. Then have the student explain to the class the reason for any changes. Encourage class discussion and critique of the redesigned card.

- Next, have the students prepare a dummy copy of a layout for their personal business cards. Critique their designs and supervise the students as they produce their cards using desktop publishing software.

Materials needed:

- Sample business cards or handout: **PICK A CARD; ANY CARD.**
- Desktop publishing software
- Clip art software or scanned images
- Card stock to print final copy of business cards

Comments:

- After the students create their personal business cards, the cards can be copied and printed on a laser printer on heavier stock paper. Students can share their personal business cards with each other.

- If a scanner is available, students may scan their own graphics for this project.

Terminology:

- Dummy copy - - A mock layout of the design that has been sketched or pasted up on a page.

PICK A CARD; ANY CARD!

SAMPLE CARDS

NOTES & SKETCHES

DUMMY COPY

DESKTOP PUBLISHING PROJECT

CONTRIBUTOR:
Diane C. Davis
Southern Illinois University
Carbondale, IL 62901

Objectives:

- The student will demonstrate a knowledge of desktop publishing terms by creating a document containing the specifications given.
- The student will design his/her/own project using proper desktop design techniques and considerations.

Procedures:

- Review proper desktop publishing design techniques and considerations.
- Distribute the list of specifications that are to be included in students' projects. That is, give some specific items that must be included in the project which will demonstrate students' understanding and application of the publishing terms and features.
- Explain to students that their project should be something they can use, such as an invitation to a party, a wedding announcement, a short newsletter, etc.

Materials needed:

- Handout: **DESKTOP PUBLISHING ASSIGNMENT**
- Desktop publishing software

Comments:

- This activity provides students with an opportunity to develop their own creative design and at the same time requires them to include certain items or specifications in the project and to follow directions.

Name ______________________________

DESKTOP PUBLISHING ASSIGNMENT

Plan and create a one-page project of your own choosing using desktop publishing software. Include each of the following items in the one-page project. If you choose not to include all of these items in the one-page project, then either prepare two different projects or prepare a two-page project.

1. One box or circle with shading and text.
2. One perpendicular line.
3. Two ruler guides.
4. Two different typeface families--one serif and one sans serif.
5. Two type styles.
6. Minimum of 30 words of text.
7. Two different types of alignment.
8. Two different point sizes.
9. Graphics (optional).

Notes:

Project Due Date: ___________________________

DEVELOPING A FULL-SCALE MARKETING PLAN

CONTRIBUTOR:
Karen Schneid
Stockbridge High School
Stockbridge, GA 30281

Objectives:

- The student will develop a full-scale marketing plan for a company's product/service.

- The student will design and create DTP items for various marketing/business situations.

Procedures:

- Have students study samples of the eight items and then create a hypothetical company that produces either goods and/or services.

- Have students design and create the following items in their marketing plan:

    1. letterhead stationery with company logo
    2. envelope with company logo
    3. company business card
    4. promotional flyer (should contain the company's slogan)
    5. company greeting card
    6. company brochure
    7. newspaper layout-advertisement
    8. billboard display

- Expand the assignment, if desired, by having students include a company newsletter outlining the company's promotional strategy (purpose, goals, and objectives). Students could also prepare a 30-second radio commercial script.

Materials Needed:

- Word processor software
- DTP software
- Clip art or an image scanner

Comments:

- Rather than producing all eight items, students could choose four items if time is a problem.

DESKTOP PUBLISHING

CONTRIBUTOR:
Tom Seymour
Minot State University
North Dakota 58702-5002

Objectives:

- The student will create a business letterhead using PFS: First Publisher.

Procedures:

- Distribute and discuss handout: PROCEDURES FOR CREATING A LETTERHEAD.

Materials Needed:

- Handout: PROCEDURES FOR CREATING A LETTERHEAD
- IBM or IBM compatible computer with graphics capabilities, graphics printer, and PFS: First Publisher software.

Additional Comments:

- This concept can easily be adopted for other Desktop Publishing Software Packages.
- Students will need to have been introduced to the software package prior to their assignments.

Solution:

Great Northern Cruiselines, Inc.
137 Grant Avenue
San Francisco, California 45698
(415) 665-7878

PROCEDURES FOR CREATING A LETTERHEAD

This assignment will give you an idea how to add graphics to a publication:

Part I. Create letterhead:

____ 1. Position your curser about halfway across the screen.
____ 2. Key in the following name & address.

Great Northern Cruiselines, Inc.
137 Grant Avenue
San Francisco, California 45698
(415) 665-7878

____ 3. Position cursor on **G** in Great.
____ 4. Press the **F10** key to highlight.
____ 5. Using the **arrow** keys highlight the whole address and phone no.
____ 6. Press **F10** again to select.

Part 2. Change the font and size of the address:

____ 1. Press **F4** and highlight **Grant.**
____ 2. Press **Return.**
____ 3. Press **F5** and highlight **9 points.**
____ 4. Press **Return**
____ 5. Press **F10** twice to remove highlighting and mouse feature.
____ 6. Press **F1** and save this, choosing a name of your choice.

Part 3. Add a picture to your letterhead:

(Note: First Publisher stores **art** in **two types** of files: those with the extension **.ART** and those with a **.MAC** extension. Each **.ART** file contains a single picture; a. **MAC** clip file contains several pictures.

To create an **.ART** file from an art page, retrieve the **.MAC** file containing the art page and copy the image you want.)

____ 1. Remove **FP Disk 1** from Drive **A** and insert the **Sampler Disk.** (The Sampler Disk contains the graphics that come with First Publisher.)
____ 2. Choose **get graphic** from the **file menu.**
____ 3. Move the **arrow** to the **Business. MAC** file and press the **F10** key to highlight the file.
____ 4. Press **F1** (get) to display the art page on the screen.
____ 5. Press the **F9** key **twice** to highlight the selection tool. (This is one of the tools found on the right side of the screen).
____ 6. Position the cursor at one corner of the largest ship.

____ 7. Press **F10** key and use the **arrow** key to draw the line left or right until it extends the width of the ship.
____ 8. Now push the **down arrow** until a box is drawn around the entire ship.
____ 9. Press **F10** once to select the image.
____10. Press the **F7** key and highlight **Save Art.** Give the art a name.
____11. Press **F1** to save art.
____12. Now press ESC
____13. Press **F1** and retrieve the company we keyed earlier.
____14. Press **F7** and choose **Get Art.**
____15. Move arrow to file containing ship. Press **F10** and then **F1.**

(Note: A hand will appear on the screen. Use the arrow keys to position it on the left of the company name.)

____16. Press **F10** twice to place the image.

Part 4. Draw a line under the company name and picture:
____ 1. Press **F9** key until the pencil on the selection tools is highlighted.

(Note: Your screen will look gray when baselines are turned on.)

____ 2. Place the pencil where you want to draw the line.
____ 3. Press the **F10** key.
____ 4. Use the **arrow** keys to drawn the line.
____ 5. Press **F10** again when you have completed the line.
____ 6. Press **F9** until it returns to the first **A** in the selection tool.

(Note: Your screen will return to normal with a line drawn.)

DESKTOP PUBLISHING TEST

CONTRIBUTOR:
Desktop Publishing Subcommittee
of the Computer Education Task Force

Editor's Note: The following pages in this category consist of a teacher's manual and a test for desktop publishing. The teacher's manual contains directions for administering the test and guidelines for evaluating the student product. The three-part test addresses both knowledge and application of desktop publishing principles. The manual and test were developed by the Desktop Publishing Subcommittee of the Computer Enrichment Task Force. These materials are provided as a service to the NBEA membership and may be copied for use with your students.

MANUAL
for the
DESKTOP PUBLISHING TEST

TEST CONSTRUCTION COMMITTEE

Chairperson: Dr. Ivan G. Wallace, East Carolina University, Greenville, North Carolina. Members: Ella Fisher, East Mecklenburg High School, Charlotte, North Carolina; Barbara Williams, Elizabeth Public Schools, Elizabeth, New Jersey; Joan Belk, Myers Park High School, Charlotte, North Carolina.

CONTENT

The test consists of three parts which can be administered in three 50-minute time periods.

Part 1 consists of a multiple-choice test comprised of questions on desktop publishing theory, principles, terminology, equipment, and procedures.

Part 2 consists of two publications: a one-page flyer, a letterhead,

Part 3 consists of a one-page newsletter.

STUDENT POPULATION

Administer the test to secondary and postsecondary students completing a desktop publishing course in which principles, theory, and application have been covered. If theory and principles are taught in one class and applications are taught in a second class, the complete test should be administered only to students who have taken both classes. Or, Part 1 of the test may be given to students who have completed a course in theory, and Parts 2 and 3 may be given to students who have actual applications experience.

SUPPLIES

A pen or pencil is necessary for the objective test. Use the normal supplies typically used in the participating classroom.

STANDARDS

Excellent students at the secondary and postsecondary levels should earn at least 90 percent on the total test, and good students should earn 80 percent on the total test. A passing score of 70 percent, indicating competence, should be achieved on the total test.

You may choose to administer the test in its entirety, or by parts. For example, A comprehensive course in desktop publishing should include all three parts. However, for other situations where desktop publishing is taught only as a unit, you may choose to administer the objective test only, or the objective test plus either Part 2 or Part 3.

ADMINISTRATION

GENERAL EXPLANATION TO STUDENTS

Explain to the students that they are participating in a national project to help students and employers determine whether prospective employees (students) are ready for entry-level information processing jobs that involve desktop publishing. Ask them to do their best, just as if they were on their first job. (In order to motivate students to do their best, you might tell them that the results will count as part of their final grades.)

PART 1

Require the students to work only on part 1 and not to proceed to part 2. You should allow no more than 50 minutes for the objective test and the creation of the graphic image.

PART 2

Students should be permitted to use reference manuals when they do this part of the test. Allow 50 minutes for creating the letterhead and the flyer.

PART 3

Students should be permitted to use reference manuals when they do this part of the test. Allow 50 minutes for creating the newsletter.

SCORING OF TEST PAPERS

Use the keys (models) provided in this manual to score the completed text. Points allocated to each section of the test are as follows:

Multiple Choice	-	80
Graphic	-	20
Flyer	-	25
Letterhead	-	25
Newsletter	-	50
Total	-	200

Ample time is available for completion of all documents.

Part 1 -- Multiple Choice and Graphic

Multiple Choice

One point per question is allocated to the multiple-choice test. Use the key to the right of this text for ease of scoring the multiple choice portion of the test.

Graphic

Twenty points are allocated for the paint-type graphic image.

Subtract 5 points for unacceptable horizontal or vertical proportions.

Subtract 5 points for general appearance of the graphic if it is grossly incorrect.

Subtract 3 points for any extra lines or dots that might have gotten attached to the image in its creation.

1. d
2. a
3. e
4. b
5. a
6. d
7. b
8. b
9. a
10. a
11. e
12. c
13. b
14. e
15. c
16. b
17. c
18. e
19. b
20. c
21. a
22. d
23. b
24. e
25. c
26. e
27. d
28. c
29. c
30. c
31. c
32. e
33. e
34. b
35. c
36. d
37. a
38. a
39. e
40. b
41. d
42. c
43. d
44. b
45. d
46. e
47. b
48. c
49. a
50. a
51. b
52. a
53. e
54. a
55. b
56. c
57. c
58. e
59. d
60. c
61. d
62. a
63. e
64. d
65. b
66. c
67. a
68. a
69. c
70. b
71. c
72. c
73. a
74. b
75. c
76. a
77. b
78. a
79. c
80. d

For any publications that are not completed, you should prorate the points that are allocated for those documents based upon the contents of the publication that are completed--then subtract for other errors.

A suggested guide for scoring each publication follows:

Part 2 -- Letterhead and Flyer

Subtract 4 points each for unacceptable horizontal or vertical placement.

Subtract 2 points for any uncorrected errors that were made during processing.

Subtract 3 points for sizing of the image if it is grossly large or small.

Subtract 3 points for proportions of the image if it is grossly tall or wide.

Subtract 2 points for failing to use bold or italics emphasis if it is available to your students.

Part 3 -- Newsletter

Subtract 4 points each for unacceptable horizontal or vertical placement.

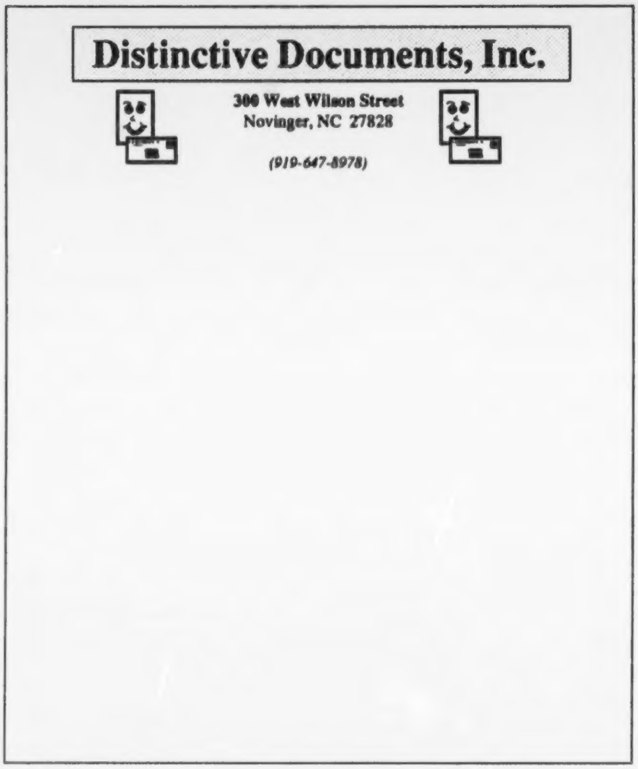
Subtract 1 point for any uncorrected errors that were made during keying.

Subtract 3 points for sizing of the image if it is grossly large or small.

Subtract 2 points for failing to use bold or italics emphasis if it is available to your students.

Subtract 3 points for proportion of the image if it is grossly tall or wide.

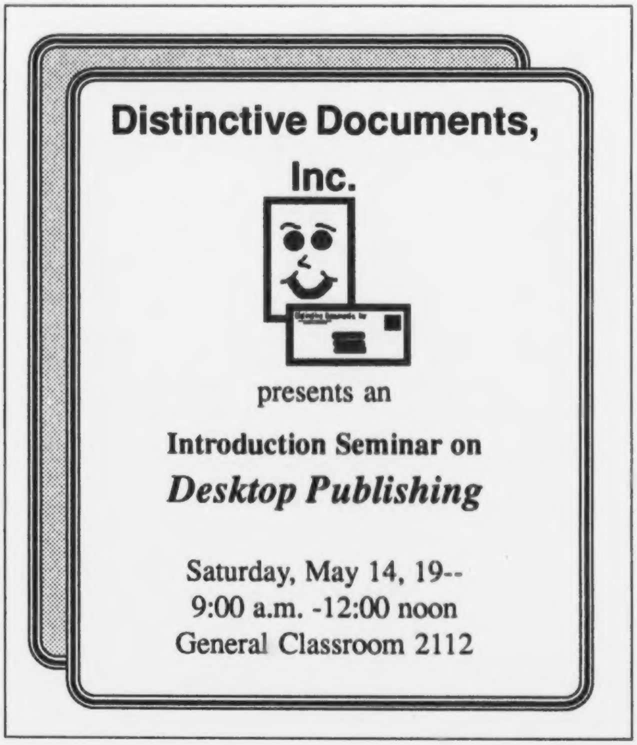
Subtract 2 points for each headline that is grossly different from the original (if you have capability of making them match the original)



Distinctive Documents, Inc.

300 West Wilson Street
Novinger, NC 27828

(919-647-8978)



Distinctive Documents, Inc.

presents an

Introduction Seminar on
Desktop Publishing

Saturday, May 14, 19--
9:00 a.m. -12:00 noon
General Classroom 2112

DESKTOP PUBLISHING TEST part 3 --Production (Newsletter)

Distinctive Documents
A REPORT
ON DESKTOP PUBLISHING

Instructions: Reproduce this one-page newsletter. Use font sizes and styles similar to the ones shown. However, you may not be able to match them exactly because of differences in computer systems, printers, and software. Create the text files on a word processor and import them in the publication, if possible.

Volume 1

Printer Sharing

A Concept for Equipping Microcomputer Labs to Teach Desktop Publishing

Because desktop publishing is an extremely expensive technology, it is imperative that a high-quality laser printer be shared among several computers. This can be achieved through automatic switches ("smart" switches) that serve as a printer-sharing device by polling each computer to accept data, serving as a data reservoir, and then passing the output on to the printer when it is idle. Several manufacturers produce some type of intelligent switch for peripheral sharing in serial, parallel, or serial/parallel versions with 4 to 24 input ports. These devices can even be cascaded into each other. For desktop publishing it is important that the switch have a minimum of 256K memory and simultaneous input from all ports. The more computers that share the device, the higher the memory should be. At DP University one LaZ-Queue with 24 input ports and 2 megabytes of memory allows 24 computers to share two laser printers so that postscript print is available to every user of the laboratory.

Distinctive Documents, Inc

Scanners

Scanners are necessary to convert line art or photographs into electronic images that can be placed in publications. Since most laser printers print in 300 dpi resolution, it would be ideal that a scanner scan at 300 dpi. As with all equipment, the scanners and scanner software range in price from $1000 to $2500. Dest, Abaton, and HP all provide excellent scanners. Also, in the past year, several manufacturers have introduced hand scan devices for as little as $200 to $300 that can scan a 4-inch wide image with a resolution of 300 dpi that produces line art and halftones. These inexpensive hand scanners are very reliable and will work very well for instructional purposes for schools operating within a limited budget.

Computer Hardware for Desktop Publishing

Since desktop publishing is graphics based, either color graphics capabilities or Hercules monochrome graphics capabilities are required on older IBM/PC-Compatible systems. Minimum RAM memory for desktop publishing requirements are 512K and a hard disk. Consequently, an older XT or AT could be used if necessary.

Since a fast microprocessor is required, most experts agree that an Intel 80286 processor chip is minimum while an Intel 80386 processor is even more desirable. This implies that to teach desktop publishing minimum equipment configurations would fall in the IBM AT, PS/2 Model 30-286, Model 50, 60, and 80 classes. (An existing IBM XT or compatible with hard disk and 512K memory will run the application extremely slowly and could be used if resources aren't available to obtain faster hardware.) Color monitors aren't necessary unless a color printer is used for printing in color.

Desktop Publishing Test

DESKTOP PUBLISHING TEST part 1

Name______________________________
Date______________________________
School or Business_________________
City/State_________________________

Part 1 consists of an objective test and the creation of a paint-type graphic image. The multiple-choice questions are designed to test your knowledge and understanding of fundamental desktop publishing terminology, concepts, and principles. You will be allowed 50 minutes to complete all the multiple-choice questions and to create the simple paint-type image that will be used on the production tests.

SCORING

Part 1			
Multiple Choice	___	-	80
Graphic Image	___	-	20
Part 2			
Flyer	___	-	25
Letterhead	___	-	25
Part 3			
Newsletter	___	-	50
Total	___	-	200

INSTRUCTIONS: Please write the letter corresponding to the most appropriate answer for the following multiple-choice questions in the answer column to the left of each question.

___ 1. **"Draw-type" graphics files consisting of a sequence of drawing commands that describe graphics you would manually produce with a pencil, straight-edge, and compass, such as mechanical drawings, schematics, charts, and ad graphics are called**

a. icons b. design elements c. bit-mapped graphics d. object-oriented graphics e. thumbnails

___ 2. **A collection of information stored on a disk is referred to as a**

a. file b. format c. text d. ruler e. layout

___ 3. **A collection of pages created by integrating text and graphics files is known as a(n)**

a. pasteup b. palette c. layout d. integrated file e. publication

___ 4. **A complete assortment of characters for a single typeface at one size, including uppercase and lowercase characters, figures, and punctuation marks is referred to as a(n)**

a. icon b. font c. style d. format e. layout

___ 5. **A deliberate area of empty space on a page, used to aid the reader in absorbing the printed information, is known as**

a. white space b. empty space c. threaded space d. opaque space e. blank zone

___ 6. **A design element at the bottom of a page, usually showing the name of the publication and the page number is known as a(n)**

a. page b. status c. header d. footer e. icon

___ 7. **A desktop publishing option that causes column guides, margin guides, and ruler guides to exert a pull on any pointer, text, or graphic that comes close to the guides are called**

a. magnetic guides b. snap to guides c. attraction guides d. orientation guides e. static guides

___ 8. **A graphic that you build into your format to make the pages more attractive and also to effectively communicate your ideas to the reader is know as a**

a. graphic boundary b. design element c. foreground d. background d. layout

___ 9. **A hardware device that reads information from a photograph or other graphic, converting it into a bit-mapped image is know as a**

a. scanner b. screen c. filter d. transformer e. filer

___10. **A linked block of text that may be edited without losing information is the same as**

a. threaded text b. header text c. footer text d. greeked text e. strung text

___11. **A location set on the horizontal ruler where text is to be aligned is called**

a. left tab b. right tab c. decimal tab d. leader tab e. none of the above

___12. **A small print or copy of a page is known as a(n)**

a. hairline b. I-beam c. thumbnail sketch d. miniature e. petite page

___13. **A mode of text placement in which text flows continuously onto successive pages is referred to as**

a. auto leading b. autoflow c. orientation d. flow charting e. bleeding

___14. **A page description language that scales fonts and is used by high-resolution printers is called**

a. scripit b. postwrite c. postpublish d. printscript e. postscript

___15. **A page opened by clicking the "L" or "R" page icon in the publication window which you put the text, graphics and guides you want repeated on every page in a publication is referred to as a**

a. page setup b. page view c. master page d. page icon e. repeating block

___16. **A palette that overlaps the publication window and contains icons for the tools used to work with text and graphics is referred to as the**

a. title bar b. tool box c. text icon d. image area e. menu bar

___17. **A paragraph specification that directs the software to hyphenate text automatically is called**

a. hyphenation zoning b. discretionary hyphen c. automatic hyphenation d. default e. dictionary checking

___18. **A rectangular solid or dotted line around a graphic that defines where text can and cannot flow with respect to the image is referred to as**

a. standoff distance b. vertex point c. custom graphic boundary d. text boundary e. graphic boundary

___19. **A section of text in a template that reserves a place for a later insertion of text and/or graphic in a publication is known as a**

a. clipboard b. placeholder c. pasteboard d. window e. text block

___20. **A selected segment of text, generally surrounded by handles or horizontal lines with loops at the top and bottom, is known as a(n)**

a. image block b. high-end block c. text block d. angles block e. icon block

___21. **A set of formatting information that is applied to a single paragraph to cause its text to reformat according to the specifications of that style is called**

a. style b. format tag c. name tag d. label e. format sheet

___22. **A small graphic image that represents a function, object, or pointer tool is called a(n)**

a. I-beam b. image c. kern d. icon e. list box

___23. **A system file that controls the font and other printing information between your system and printer is called**

a. default b. printer driver c. display driver d. export filter e. tag

___24. **A tool used to trim a graphic is called a(n)**

a. diagonal-line tool b. double headed tool c. I-beam d. style tool e. cropping tool

___25. **A kind of specification that you set to emphasize selected text within a paragraph to which a style has already been applied is know as a(n)**

a. overlay b. text block c. override d. type specification e. element

___26. **A vertical inch is comprised of how many points?**

a. 12 b. 24 c. 36 d. 48 e. 72

___27. **An I-beam displayed on the computer screen indicates that the user has selected the**

a. line tool b. cropping tool c. perpendicular tool d. text tool e. pointer

___28. **An image formed by a series of dots, with a specific number of dots per inch—also called a "paint-type" graphic—is called a(n)**

a. icon b. design element c. bit-mapped graphic d. object-oriented graphic e. thumbnail

___29. **Converting each gray area in a scanned image into various fixed patterns of black and white dots is called**

a. highlighting b. resolution enhancement c. half-tone screening d. landscaping e. image conversion

___30. **Descriptive text accompanying illustrations is referred to as a**

a. font b. marginal note c. caption d. text box e. layout

___31. **Designing, laying out, editing and producing a publication electronically, using a personal computer, word-processing and graphics software is referred to as**

a. pasting b. keyboarding c. desktop publishing d. formatting e. spreadsheeting

___32. **Fonts that are purchased separately and installed so as to expand the variety of fonts available on printers are called**

a. built-in fonts b. scalable fonts c. master fonts d. composite fonts e. downloadable fonts

___33. **Formatting applied to type, such as size, leading, or font is referred to as**

a. output selection b. orientation c. publication default d. resolution e. type specifications

___34. **Geometric shapes, drawings, or object-oriented formatting merged into your publication from another application are referred to as**

a. displays b. graphics c. designs d. positions e. portraits

___35. **In an oversize publication, the portion of the page that's printed on a single sheet of paper is referred to as a**

a. composite b. master page c. tile d. palette e. style sheet

___36. **In desktop publishing, "pica" is the same as**

a. one-tenth of an inch b. 6 points c. 10 points d. 12 points e. 14 points

___37. **Incremented units of measure displayed across the top and down the left side of the publication window are referred to as**

a. rulers b. electronic tick marks c. text alignment icons d. tabs e. margins

___38. **Labels placed within angle brackets (<>) in a word-processed file that tell the desktop publishing software how to format paragraphs of text when the file is imported into the desktop publisher are referred to as**

a. tags b. tick marks c. descenders d. ascenders e. layout grids

___39. **Simulated text used to speed the screen display of text is called**

a. blocked text b. bit-mapped text c. threaded text d. iconed text e. greeked text

___40. **Text, graphics, or guides that are to be repeated on every page of a publication are called**

a. style definitions b. master items c. import filters d. place holders e. guideposts

___41. **Text or graphics that appear in black on the screen and are printed in black are known as**

a. background b. color c. layout d. foreground e. display

___42. **Enlarging or reducing a graphic on a page is known as**

a. ruling b. tagging c. sizing d. scaling e. telescoping

___43. **The imaginary line on which letters in a line of text rest is called a**

a. position b. vertex position c. zero point d. baseline e. none of the above

___44. **The area of a page inside the margins in which you put the text and graphics is referred to as the**

a. layout grid b. image area c. orientation d. design element e. column guide

___45. **The arrangement of text and graphics on a page is called the**

a. column guides b. cutout c. boundary d. layout e. page view

___46. **The dotted, vertical, nonprinting lines that mark the left and right edges of the columns created by the user are called**

a. margin guides b. ruler lines c. layout guides d. column molds e. column guides

___47. **The style of typeface that lacks the small extra strokes added to each letter which typify a serif typeface is called**

a. bold b. sans-serif c. italics d. cursive e. cleantype

___48. **The horizontal measure of a column is called the column**

a. length b. layout c. width d. vertex e. span

___49. **The margin along the binding edge of the paper, the left margin of a right hand (odd-numbered) page or the right margin of a left hand (even-numbered) page is called the**

a. inside margin b. outside margin c. counter margin d. margin guide e. inside guide

___50. **The nonprinting dotted lines that mark the left, right, top, and bottom of a page are called**

a. column guides b. ruler guides c. margin guides d. alignment guides e. inside guide

___51. **The number of pixels in a square inch displayed on a computer screen is referred to as**

a. tiling b. resolution c. baseline d. greeking e. grid matrix

___52. **The order in which text and graphics overlap on a page is referred to as**

a. layer order b. stacking order c. image order d. tool order e. fixing order

___53. **The place you create in which to insert or type text is referred to as a**

a. caption b. drag c. bounding box d. graphic boundary e. text arena

___54. **The resolution of text and graphics on your screen depends on the density of your screen's**

a. pixels b. point size c. printer driver d. palette e. dithering pattern

___55. **The right margin of a right hand (odd-numbered) page or the left margin of a left hand (even-numbered) page is called the**

a. inside margin b. outside margin c. counter margin d. margin guide e. inside guide

___56. **The standard unit of measurement for type is know as a**

a. pica b. tab c. point d. vertex e. font

____57. **The styles applied to a type font (i.e., normal, bold, italic, etc.), the styles applied to a paragraph from a style sheet, and/or the way that text looks, defined by its type specifications are called**

a. format b. style c. type style d. font e. rulers

____58. **The temporary holding place where cut or copied text, graphic, or group selection is stored is called a**

a. stackboard b. storage area c. work space d. holding pen e. clipboard

____59. **The term used when something is fixed, or attached to a point on the page in the publication window is**

a. collated b. nailed c. baselined d. anchored e. blocked.

____60. **The thinnest rule possible, generally a .25 point, is called**

a. Em b. tick mark c. hairline d. En e. 10 CPI

____61. **The tool which looks like an arrow and is used most often to select and manipulate text and graphics is called a**

a. text tool b. line tool c. box tool d. pointer tool e. font tool

____62. **The vertical distance between lines of text, generally 120 percent of the type size, is called**

a. leading b. kerning c. spacing d. threading e. vertex

____63. **The vertical or horizontal position of a page, which you select when you set up your publication is known as the**

a. master page b. page view c. placeholder d. configuration e. orientation

____64. **The way in which text lines up on a page is referred to as**

a. column guiding b. designing c. format d. alignment e. spacing

____65. **The way text looks, as defined by its type specifications, is referred to as**

a. document management b. text format c. page layout d. decorative motif e. appearance factor

____66. **The work surface surrounding the page or pages you are working on is known as**

a. cardboard b. pressboard c. pasteboard d. boardering e. clipboard

____67. **To adjust the spacing between pairs of adjacent characters is called**

a. kerning b. emulation c. horizontal adjusting d. scaling e. character separating

____68. **To copy text from a desktop publication to an external word processing application or text-only file is known as**

a. exporting b. transferring c. relocating d. importing e. merging

____69. **To create white text on a contrasting black, shaded, or color background is called**

a. inverted type b. marked type c. reverse type d. selected type e. shaded type

____70. **To hold down a mouse button continuously while in the process of moving, selecting or drawing an object is called**

a. kerning b. dragging c. flowing d. highlighting e. marking

____71. **To place a graphic on the page with one side extending outside the page edge is known as**

a. overlapping b. color sheeting c. bleeding d. cropping e. leading

____72. **To place text on a page by clicking the mouse button to discharge a loaded text icon is called**

a. text edit b. text flow c. text placement d. clicking a text icon e. discharging text

___73. **To use text and graphics prepared on other software programs in a desktop publishing program, you would use**

a. the "place option" b. an export filter c. an insertion point d. an overlay e. an importer

___74. **To visually differentiate a selection on the screen in order to make the selection active is called**

a. image editing b. highlighting c. enhancing d. distorting e. none of the above

___75. **When a publication is open, the pages that consist of an even-numbered page on the left and an odd-numbered page on the right are known as**

a. fixed space b. page set-up c. facing pages d. paginations e. mirror pages

___76. **When the inside margin is the right margin of even-numbered pages and the left margin of odd-numbered pages, the publication being produced is known as a**

a. facing-page publication b. portrait publication c. double-sided publication d. scalable publication e. dual pasteup

___77. **When placing the following image** **on a one-page newsletter (assuming the image is almost as wide as a column), the image is best suited to be placed**

a. in the center column b. in the left column c. in the right column d. in any column e. in the left or the right column

___78. **When placing the following image** **on a newsletter with facing pages (assuming the image is almost as wide as a column), the image is best suited to be placed**

a. in the center column of the left page b. in the left column of the right page c. in the right column of the right page
d. in the center column of the right page e. any column

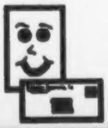
___79. **When a publication is "tall" as opposed to "wide," the orientation is referred to as**

a. skinny b. photographic c. portrait d. landscape e. dithered

___80. **When a publication is "wide" as opposed to "tall", the orientation is referred to as**

a. skinny b. photographic c. portrait d. landscape e. dithered

Instructions: Create the following as graphic image using a paint-type program. You will then place and size the image in the production publications that follow:

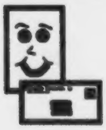


DESKTOP PUBLISHING TEST part 2 --Production (Letterhead and Flyer)

Publication #1: Letterhead

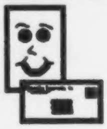
Instructions: Reproduce the following publication as a company letterhead. Use font sizes and styles similar to the ones shown. However, you may not be able to match them exactly because of differences in computer systems, printers, and software.

Distinctive Documents, Inc.



300 West Wilson Street
Novinger, NC 24828

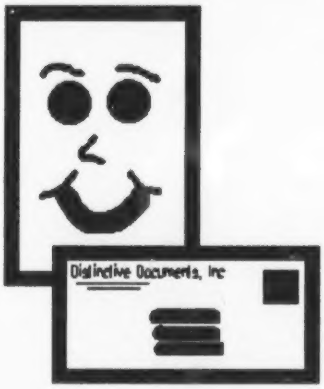
(919-647-8978)



Distinctive Documents, Inc.

Publication #2: Flyer

Instructions: Reproduce the following flyer. Use font sizes and styles similar to the ones shown. However, you may not be able to match them exactly because of differences in computer systems, printers and software.



presents an

Introduction Seminar on

Desktop Publishing

Saturday, May 14, 19--

9:00 a.m. -12:00 noon

General Classroom 2112

Distinctive Documents

A REPORT

ON DESKTOP PUBLISHING

Instructions: Reproduce this one-page newsletter. Use font sizes and styles similar to the ones shown. However, you may not be able to match them exactly because of differences in computer systems, printers, and software. Create the text files on a word processor and import them in the publication, if possible.

Volume 1

Printer Sharing

A Concept for Equipping Microcomputer Labs to Teach Desktop Publishing

Because desktop publishing is an extremely expensive technology, it is imperative that a high-quality laser printer be shared among several computers. This can be achieved through automatic switches ("smart" switches) that serve as a printer-sharing device by polling each computer to accept data, serving as a data reservoir, and then passing the output on to the printer when it is idle. Several manufacturers produce some type of intelligent switch for peripheral sharing in serial, parallel, or serial/parallel versions with 4 to 24 input ports. These devices can even be cascaded into each other. For desktop publishing it is important that the switch have a minimum of 256K memory and simultaneous input from all ports. The more computers that share the device, the higher the memory should be. At DP University one LaZ-Queue with 24 input ports and 2 megabytes of memory allows 24 computers to share two laser printers so that postscript print is available to every user of the laboratory.

Distinctive Documents, Inc

Scanners

Scanners are necessary to convert line art or photographs into electronic images that can be placed in publications. Since most laser printers print in 300 dpi resolution, it would be ideal that a scanner scan at 300 dpi. As with all equipment, the scanners and scanner software range in price from $1000 to $2500. Dest, Abaton, and HP all provide excellent scanners. Also, in the past year, several manufacturers have introduced hand scan devices for as little as $200 to $300 that can scan a 4-inch wide image with a resolution of 300 dpi that produces line art and halftones. These inexpensive hand scanners are very reliable and will work very well for instructional purposes for schools operating within a limited budget.

Computer Hardware for Desktop Publishing

Since desktop publishing is graphics based, either color graphics capabilities or Hercules monochrome graphics capabilities are required on older IBM/PC-Compatible systems. Minimum RAM memory for desktop publishing requirements are 512K and a hard disk. Consequently, an older XT or AT could be used if necessary.

Since a fast microprocessor is required, most experts agree that an Intel 80286 processor chip is minimum while an Intel 80386 processor is even more desirable. This implies that to teach desktop publishing minimum equipment configurations would fall in the IBM AT, PS/2 Model 30-286, Model 50, 60, and 80 classes. (An existing IBM XT or compatible with hard disk and 512K memory will run the application extremely slow and could be used if resources aren't available to obtain faster hardware.) Color monitors aren't necessary unless a color printer is used for printing in color.

Multimedia/ Presentation Software Hypergraphics

Category 12G

RESTRUCTURING THE CURRICULUM AND THE CLASSROOM TO TEACH TELECOMMUNICATIONS IN OFFICE ADMINISTRATIVE SYSTEMS

CONTRIBUTOR:
Kay Abernathy
Hardin-Jefferson ISD
Sour Lake, TX 77659

Objectives:

- The students will communicate with other students to solve problems and to think critically.

- **Editor's comment: This submission is an account of the learning process as it was experienced by the teachers and the students.**

Procedures:

- Students were divided into groups of three students each, and topics were assigned: Traditional Telephone Equipment and Techniques, Telecommunications -- An Overview, Technology Networks, and Responsible Use of Technology. Each group researched the topic, prepared a word processing paper, learned to use Hypercard, created a Hypercard stack, and presented the Hypercard stack to the class as other class members videoed the presentation.

Materials needed:

- The classroom is equipped with eleven IBM microcomputers on a Novell network with an IBM Model 60 file server and six Macintosh Plus and SE computers networked to an Apple LaserWriter printer and to an Imagewriter II printer. An Apple flatbed scanner is connected to one of the Macintosh computers. One Macintosh SE is used for telecomputing using an Apple 1200 baud modem. In the presentation phase of this project, students used a projection panel with the over-head projector and a camcorder to visually record student products.

Comments:

- The first assignment was to research the group's topic using the Hardin-Jefferson High School library, the Lamar University library, and the references available in the classroom. Each group connected by modem and telephone line to the Lamar University library electronic system using facilities available in the classroom.

- After gathering data, doing research, and working together, each group wrote one research paper using the word processor -- both IBM and Macintosh computers were used.

- As groups completed the research phase of the project, they worked together to learn Hypercard and create a sample stack. Students used George Berkman's Hypercard in a Hurry. Students learned to use clip art and to place graphics into the cards.

- Working together, students then condensed the original research papers to write scripts for their original stacks. Creating each individual card complete with script and graphics gave students practice in testing the consequences of their actions, choosing among alternatives, and evaluating their work to see if ideas worked or failed and how they might improve the problem-solving process. One group expanded the original assignment by adding animation and music.

- Presentation of the projects was still another path to travel for team members. Each student was required to play an equal part in the presentation; several hours of practice in learning to use the projection panel and the overhead projector as well as in oral presentation procedures proved beneficial to the groups. Tables, chairs, and computers were moved; the video camera was set up in the classroom; one wall was transformed into a backdrop; and the classroom became a production studio. Students practiced using the camera before the big week arrived. Finally, presentations were made with each student evaluating performances of the other groups.

- As a group, they presented complex work which resulted from the combined skills of individual group members. Students shared ideas, data, and information. Students learned not only how to access vast amounts of information, but how to manage it effectively. Academic achievement improved because there was a shift from teacher-centered to student-centered learning -- a shift from authority to discovery.

- Our ultimate evaluation came when business teachers from Hull-Daisetta High School, a small neighboring school, called and asked if they could bring students to our classroom for a field trip on telecommunications. Our students volunteered to present the program, polished their presentations, and performed for their peers, achieving personal and academic satisfaction through the hypermedia project.

- Editor's comment: This project won third place in the 1990-91 TEX (Technology Excellence) Contest from the Texas Center for Educational Technology. This project summary is printed with the permission of the Texas Center for Educational Technology.

INTEGRATING MULTIMEDIA INTO THE CURRICULUM

CONTRIBUTOR:
Judy D. Winzurk
Milton High School
Alpharetta, GA 30201

Objectives:

- The student will develop authoring skills utilizing multimedia software.
- The student will research, plan and complete a folder on the academic topic of their choice.

Procedures:

- Explain multimedia and its possible uses (Handouts 1 & 2)
- Introduce IBM's multimedia software, LinkWay (Handouts 3,4,5,6)
- (Any multimedia software could be introduced here)
- Demonstrate the steps involved in creating a new folder.
- Explore teacher & student created folders on various subjects.
- Discuss steps in designing/authoring multimedia (Handouts 7,8)
- Choose topic, research, and plan folder ideas (Handouts 9,10,11)
- Create application folder
- Critique by teachers & other students (Handout 12)

Materials needed:

- Computers - PS/2 Model 25 or higher either Networked or with hard disk drive
- Software - IBM(LinkWay) or Macintosh(HyperCard) or other software hypermedia
- Mouse for each student
- Optional media devices: video disk player, speech adapter, digitizer, scanner

Comments:

- Editors comment: The following is an account of how the contributor integrates multimedia into her coursework:

I am teaching a multimedia course, which introduces multimedia and how it can and is being used by schools and businesses. The course begins with demonstrations of how to create a multimedia application folder using LinkWay, IBM's multimedia software. Although this is an entire course, this software could be used in many classes to complete projects.

Students are able to explore completed folders to help them gain an understanding of what capabilities exist within LinkWay's framework. Some of the folders were completed by students while others were completed by teachers. This gives the students a variety of topics, styles, and levels of folders to explore. While exploring, students have the opportunity to discuss good and bad characteristics of these folders. This step helps them avoid making critical design errors.

This leads us into a discussion of good and bad folder design and how to avoid common design mistakes. Once students have reached a comfort level with LinkWay and the concepts of multimedia, they are asked to select a teacher with whom they have a good rapport to help them complete an academic contract on the subject matter of their choice.

Once a topic has been approved, students spend several days in the library researching the topic. The academic teacher may also supply the student with books, articles, or other valuable information to incorporate into their folders.

Once the research phase is complete, students begin the planning process. I developed planning sheets to aid the students in laying out page by page how they want their folder to look. This also gives them the opportunity to work out where necessary buttons need to be placed to link the pages of information together. It forces students to organize their information and break it down in a way which can be incorporated into an effective multimedia presentation. It also helps them determine what types of pictures or artwork they plan on utilizing in their folder to create interest and emphasis to the topic being presented. This phase is very time consuming and painful for the students because they are forced to make decisions about their folders. In the long run, however, planning saves time and frustration in avoiding major design mistakes.

Once folders have been completed, students critique other students' folders and are encouraged to offer honest, constructive criticism. Teachers also critique the folders, mainly checking the accuracy of the information presented. Students are then given an opportunity to make corrections or adjustments or simply "polish up" their folders.

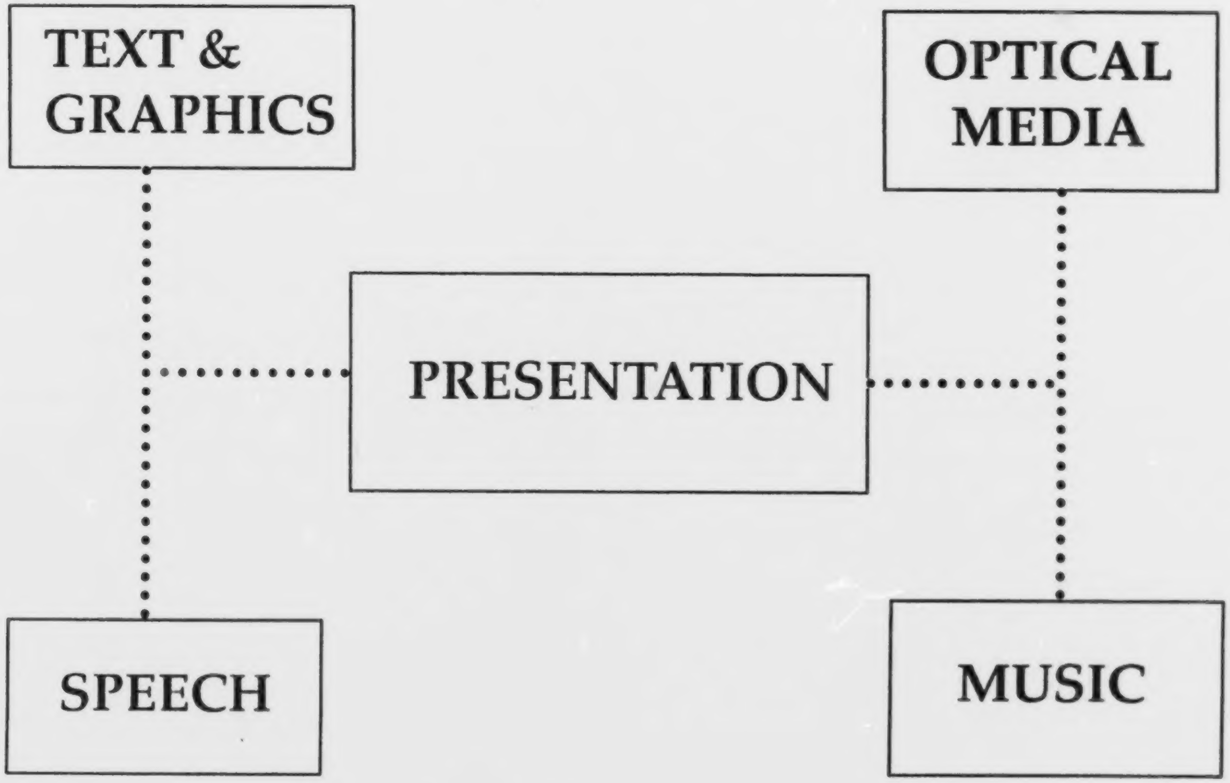
The final phase involves sharing the completed folders with the content teachers who helped with ideas and information in the beginning stages. The hope here is that the content teachers may be able to utilize the folders in their classrooms, incorporating them into the curriculum where appropriate. The student authors are very proud of their work and the idea of having their folders actually used as a teaching module is very gratifying and motivational.

One of the biggest benefits students seem to gain from working with this multimedia project is being in charge of their own learning and being given numerous opportunities to make decisions about their project.

Terminology:

- Folder: One application on one topic created using IBM's LinkWay.
- Multimedia: The integration of text, audio, graphics, still pictures, and moving pictures into a simple computer controlled, multimedia application.
- LinkWay (IBM): Multimedia software for authoring applications on an IBM or compatible computer. It is a blank skeleton in which you create the application of your choice.
- HyperCard (Macintosh): Multimedia software for authoring applications on a Macintosh computer. It is a blank skeleton in which you create the application of your choice.

MULTIMEDIA SYSTEMS



TEXT & GRAPHICS

OPTICAL MEDIA

PRESENTATION

SPEECH

MUSIC

HANDOUT #2

What is LinkWay?

LinkWay allows you to integrate many types of electronic devices, such as CD units, videodisc players, color televisions, scanners, video cassette recorders, digitizers, video cameras, and much more!

You can now link, control, and organize information from various sources and medias to create your own programs based on individual classroom and personal needs. Using a mouse to make selections, students can learn about any variety of topics.

TAKE
MOVIE
2

Application folders can illustrate points with color photographs, sound recordings or even short video segments shown on an attached television. LinkWay folders can promote involvement and internalized learning for students. Because of its flexibility, you are only limited by your own imagination!

MA/IP–Multimedia/Presentation Software/Hypergraphics

HANDOUT #3

LinkWay has five menus:

Folder	Page	Object	Go To	Option
Open	Print	New	Base Page	DOS
New	New	Move	First Page	Directory
Access Level	Cut	Move + Size	Last Page	Set Mode
Quit	Paste	Edit	Next Page	Bg Color
Save	Delete	Cut	Previous Page	Fg Color
Exit LinkWay	Line	Paste	Link	Status
	Box	Delete	Find	Menu Bar
	Bar	Tools	Findnext	Fonts
	Undraw		Retrace	

LWPaint has five Menus:

Picture	Draw	Tools	Options	Color
Open	Pencil	Undo Last	Bg Color	Show Color
New	Line	Eraser	Make Fade	Palette
Cut	Box	Clear All	Mix Color	256 Colors
Paste	Bar	Copy	Palette	
Print	Shade Box	Scale	Set Width	
Quit	Cube	Shift	Font	
Save	Circle	Magnify	Show Grid	
Exit Paint	Fan	Fill	Set Mode	
	Ribbon	Fade	Directory	
	Airbrush	Smooth		
	Text			

"BUTTONS"

Provide the Link!

TYPES OF BUTTONS:

Go - Another page

Link - Another page in another folder

Find - Searches for strings

Text Pop-Up - Text window is displayed

Picture Pop-Up - Displays hidden graphic image

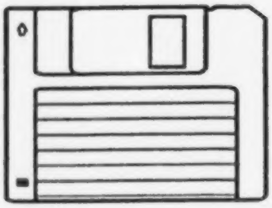
Script - Commands for complicated tasks

Document - Import ASCII files from other source

Reference - Looks up and displays part of text

HANDOUT #6

Helpful Folders & Buttons



LinkWay contains many useful folders and buttons. You can explore these folders and "cut" useful buttons and "paste" them into your own folders. This saves you from having to reinvent the wheel.

Folders Available:

SNDCLIPS - Animated and sound effects sample

DRAW - Sample buttons to draw lines and shapes

ANIMATE - Simple animation buttons

SPEECH - Speech record and playback buttons for IBM PS/2 Speech Adapter

EFFECTS - Samples of highlighted buttons for special effects

LASERDEM - Videodisc sample using Laserlink Video Driver

HANDOUT #7

PLANNING PRESENTATIONS

WHAT DO I WANT TO TEACH?

HOW DO I WANT TO TEACH IT?

WHAT HARDWARE IS AVAILABLE TO DEVELOP & RUN THE FOLDER?

HANDOUT #3

FOLDER & PAGE DESIGN

Well designed folders:

-Navigation should be simple and consistent
-Built-in direction
-Nonlinear
-Group information into topics, themes, ideas
-Make sure "links" serve a purpose
-Should flow—consistent buttons, colors, icons
-Review or bring closure to folder

Well designed pages:

-Visually pleasing
-Screens should not be "cluttered"
-Text generously spaced
    (Readabilty of computer is 30% less than printed text)
-Use dark background colors
    Blue or Black
-Use light text colors
    White or Yellow
    Avoid Red text
-Use top 16 colors from palette

LinkWay Contract (Programming 606)

Student:____________________
Content Teacher:________________
Bus. Ed. Teacher: Mrs. Winzurk

Content Grade ______
LinkWay Grade ______

LinkWay Project Title:
Programming 606 Objectives: The student will be able to: 1. Collect and organize materials and resources relating to the specific content 2. Plan in storyboard format project idea in organized, logical order 3. Utilize the LinkWay software to construct a viable LinkWay folder 4. Use non-linear thinking techniques in constructing the folder 5. Demonstrate effective use of buttons, paint program, speech synthesizer, digitizer, and video disks when appropriate with content of folder
Content Objective:
Content of LinkWay Folder:

Signatures:
Student's:____________________
Content Teacher's:________________

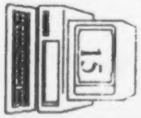
Due Date:__________
Contact Dates with Content Teacher: ____ ____ ____ ____
(Place an "OK" with your initials if material is correct & adequate)

HANDOUT #10

LinkWay Layout Sheet

Folder Name:___________

Buttons



Page = ____

ID = ____

Content:_______________________________

LinkWay Layout Sheet for POP-UP Text

Page = _____

ID = _____

Text:

Content:____________________

HANDOUT #12

LINKWAY FOLDER
Grading Sheet

NAME
FOLDER TITLE

FOLDER PLANNING SHEETS (10 pts.)

FOLDER DESIGN & LAYOUT (20 pts.)

USE OF COLOR
USE OF BUTTONS
USE OF TEXT POP-UP
USE OF PICTURE POP-UP
USE OF PICTURES

CONTENT OF FOLDER (60 pts.)

PRESENTATION OF MATERIAL
ACCURACY OF CONTENT
SPELLING, GRAMMAR, PUNCTUATION

WORK HABITS (10 pts.)

ATTENDED CLASS REGULARLY
USED CLASSTIME WISELY
RESPECT FOR EQUIPMENT

GRADE

Networking

Category 13

CHECKLIST TO CONSIDER WHEN INSTALLING NETWORKS AND MICROCOMPUTER LABS

CONTRIBUTOR:
Deborah M. Stipp
University of Nebraska--Lincoln
Lincoln, NE 68588

Networking –

Investigate the following for networking:

-- Cost of software or yearly fee for use of software.
-- Availability of software to meet curriculum needs.
-- Speed of access of networked software.
-- Number of computers or terminals allowed to one unit.
-- Distance limitations in hooking cables to host or central unit.
-- Remote operation capabilities.
-- Training needed to operate and run network.
-- Ease of student/teacher access into the system.
-- Controlled security access.
-- Maintenance required.
-- Vendor support and location of vendor support.
-- Ease of loading new material, saving student and teacher data.
-- Choices of networked programs.
-- Backup procedures and down time.
-- Replacement costs to upgrade software.

Software Warranties –

Check these items on software warranties:

-- Updating/revisions: free or is a fee charged?
-- Shipping and handling costs when ordering.
-- Time of the warranty: 30, 60, 90 days, 1 year, lifetime.
-- Return authorization from the company may be required.
-- Is purchase order number required to verify proof of purchase?
-- Repair or replace? Is benefit described in the warranty?
-- Is there a reduced cost for replacement?

Computer Lab –

When designing a computer lab, consider these points:

Space requirements
-- Room size--student movement. Is there adequate room for students to have their own space?
-- What are furniture needs--desks, chairs, computer tables, work stations?
-- Consider lighting and carpeting needs.
-- Consider heating and air ventilation needs.
-- Consider non-usable space: corners, whiteboards, shelves, windows, location of heating vents.
-- Consider availability of staff and their proximity to computer lab.
-- Consider the availability of room or rooms for computer lab.
-- Identify modifications in electrical and physical layouts.
-- Consider security of building, doors, and windows.
-- Are telephone lines available as needed if a modem is to be used?
-- What will staff and student access to the facility be?
-- What are prerequisites students will need to function competently on computers?
-- What training will be needed for staff and personnel to operate the computer lab?
-- How will person(s) be identified to run the computer lab?
-- Check fire codes and safety regulations for electricity requirements and wiring.
-- Consider what changes must be made in physical layout to accommodate expansion in computer lab.
-- What storage facilities are available and are needed?
-- Who will be responsible for maintaining equipment and inventory of hardware and software? What procedures are needed?
-- What rules and regulations will be enforced in the computer lab?
-- Has a plan been developed for ongoing equipment and software upgrading?

Training Staff –

Points to remember in training staff to use a computer network or system:

-- Determine what needs to be taught to whom--clerical staff, administrators, teachers, aids, students, etc.
-- Remember teachers do not need to be repair technicians; teachers and staff do need to be able to do basic troubleshooting.
-- Design general in-service sessions for those staff members who are not computer literate.
-- Design specific in-services for those staff members who need specific hardware, software, or accessories explained as to function and use. This would include problem-solving sessions, sharing of successes, coordination of activities into daily-use patterns.

- Avoid making the assumption in training sessions that staff involved are computer literate. Computer competency is the ability to apply the knowledge of hardware, software, and accessories. If teachers are planning to develop curriculum to integrate computer activities, then have a session to design the curriculum specifically for that purpose.
- Offer seminars during the school year on new technology, computer and software changes, curriculum ideas and teaching tips, etc.
- Prepare a master training schedule on what will be offered and when.
- Develop profiles on staff computer skills and use patterns for planning for future training.
- Reward staff for developing new computer skills and successful application of computer and software programs; recognize their efforts by presentations at school board and community events, local media, newsletters, etc.

Staying Up to Date –

Stay abreast of computer and software developments:

- Collect literature and catalogs of hardware and software by computer vendors and from educational companies.
- Develop a communication network (local, state, and national) with teachers and administrators for which hardware and software have been purchased. Record advantages and disadvantages identified.
- Collect and distribute lists of software and hardware used by other school districts.
- Inventory software within the entire school district and establish a central location for maintaining copies of software for others to preview.
- Arrange hardware and software demonstrations and previews by vendors and distributors for staff in the district--aids, clerical, teachers, administrators, students, community members, etc.
- Maintain a current software list with subject, vendor, price, local distributor, rating, and evaluation to teachers and administrators.
- Prepare a district technology newsletter.
- Organize a district technology committee to act as a representative group for problem solving and information collection.
- Maintain a technology library with previews, catalogs, software, curriculum, magazines and technology periodicals and other literature available for checkout by teachers, administrators, clerical, etc.
- Subscribe to software and hardware reviews.
- Increase contact with chambers of commerce and other business organizations to keep abreast of computer applications in business.
- Contact major employers in area and assess the companies' skill needs.
- Increase contact with universities, colleges, institutes, and training facilities in the area and keep abreast of course offerings and arrange for staff to visit facilities and/or take classes.
- Participate in "expo's," fairs, and seminars in the computer field.

Telecommunications/ Electronic Mail

Category 14

652A

ON-LINE DATA SEARCH

CONTRIBUTOR
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Objective:

- The student will gain practical experience in using an on-line database to search for information.

Procedures:

- Introduce students to the use of an on-line encyclopedia, such as The Grolier Academic American Encyclopedia (available through Genie, CompuServe, and Prodigy).

- Develop a given "Database Search Request Sheet." Your "Database Search Request Sheet" should contain between twenty and thirty questions of the type listed in the example below. Some of the questions should require students to look up only one entry (i.e. "In what year did New Mexico attain statehood?). Other questions require that students correlate information from more than one item (i.e. Who was the president of the United States the year the first World Series was held?).

- If practical, consider timing students during their search. The exercise could form the basis of a contest.

Materials needed:

- By nature of the assignment, students need access to an on-line encyclopedia/database. If it is impossible to arrange an on-line experience for the students, the same exercise can be completed with a CD-ROM based reference book.

Comments:

- As more information becomes available on-line, businesses employees are being required to conduct efficient, well-organized electronic research projects. This exercise will provide students an opportunity to improve their on-line research skills.

- For further information about on-line databases used by businesses, you may refer to **PC World**, April 1991, pp. 165-174.

Sample Questions for a Database Search Request Sheet

Using an on-line encyclopedia such as the Academic American Encyclopedia available through Genie, CompuServe or Prodigy or a CD-ROM based encyclopedia, answer the following questions. (**The answers are listed in bold type below the questions.**)

1) In what year did New Mexico attain statehood?
1912

2) When was the transcontinental railroad completed?
May 10, 1962

3) ENIAC, commonly known as the first electronic computer, used vacuum tubes to perform calculations. How many tubes did ENIAC have?
18,000

4) Vacuum tubes were replaced by transistors because they are smaller, require less power, and are more dependable. The transistor was invented in 1948 by a team of three researchers. What were their names?
Walter H. Brattain
John Bardeen
William Shockley

5) Henry Ford, the man who founded the Ford Motor Company, was born to immigrant parents. From which country did his parents come?
Ireland

BONUS QUESTION!

6) Who was president of the United States when the first World Series was held?
Theodore Roosevelt. He succeeded William McKinley, who died in office in 1901.

The first World Series, which saw Pittsburgh battling Boston, was held in 1903.

** All answers taken from Grolier Academic American Encyclopedia.**

INTRODUCTION TO TELECOMPUTING

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Objectives:

- The students will gain an understanding of the hardware (modem) components and software features (communications software) involved in telecomputing.

- The student will demonstrate the use of a modem and communications software to communicate with another computer system.

Procedures:

- Distribute the handouts: **TELECOMPUTING COMPONENTS** and **TELECOMPUTING TERMINOLOGY**

- Discuss the concept of telecomputing: Telecomputing is the use of a modem and communications software to enable a personal computer to communicate with another computer through telephone lines.

- Discuss the hardware and software components: the modem and communications software. Demonstrate communications software features and functions. Next, discuss the protocol parameters that must be set for successful communication to take place. To set parameters for successful electronic communication, students need to know that for two computer systems to exchange information certain aspects of the process must be handled in a compatible way. The user is required to set the **baud rate** (modem transmission speed), **parity, data bits,** and **stop bits**. (Use the telecomputing terminology handout as the basis for discussion). How do students know what those settings are? They must get the settings from the computer system (bulletin board, mainframe, etc.) with which they want to communicate. By far the most common settings are N/8/1 (no parity, 8 data bits and 1 stop bit) and E/7/1 (even parity, 7 data bits and 1 stop bit).

- Demonstrate the use of the modem and communications software to contact an electronic bulletin board, online service, or mainframe computer. Give students assignments requiring them to contact an electronic bulletin board, online service, or mainframe computer to obtain information for a class project/report, join a user or interest group, use e-mail, send or receive files, or capture/print screens.

Materials needed:

- Personal computer modem (internal or external) and communications software. When a modem is purchased, many manufacturers supply communications software. Communications programs are available also in the public domain.

- Handouts: TELECOMPUTING COMPONENTS and
  TELECOMPUTING TERMINOLOGY

Comments:

- Bulletin board systems with 800 numbers can be accessed by students. Additionally, government bulletin boards are relatively inexpensive. If you do not have access to a modem and telephone line, several relatively inexpensive (under $50) telecommunications simulation programs are available.

Terminology:

See the handout: TELECOMPUTING TERMINOLOGY.

TELECOMPUTING TERMINOLOGY

- **baud rate** -- unit to measure transmission telecomputing terminology speeds. BPS (bauds per second) range from 300 to 9600+. When purchasing a modem, select a modem with a speed for transmission of at least 1200 baud. Modems with baud rates of 1200 and 2400 are the most common. In order to communicate, the baud rate parameter you set must match the baud of the host computer.

- **capture** -- a feature of communications software which allows the "capture" of what appears on the screen to a file or to the printer. This enables the user to either print everything displayed on the screen while online or print the file at a later time.

- **data bits** -- the number of bits (0 or 1) in a coded character set. ASCII uses a coded character set consisting of 7-bit coded characters. EBCDIC is a coded character set consisting of 8-bit coded characters.

- **downloading** -- retrieving a file or program from another computer system.

- **echo** -- the reversal of a signal, bouncing it back to the sender, used to do an echo check (a check to determine the correctness of the transmission). This is used when dealing with large transmissions of data; so, the echo is usually off.

- **bulletin board systems (BBS)** -- a modem-equipped computer that can communicate with other computers over telephone lines. These "electronic" versions of the traditional bulletin board are becoming more common even in schools.

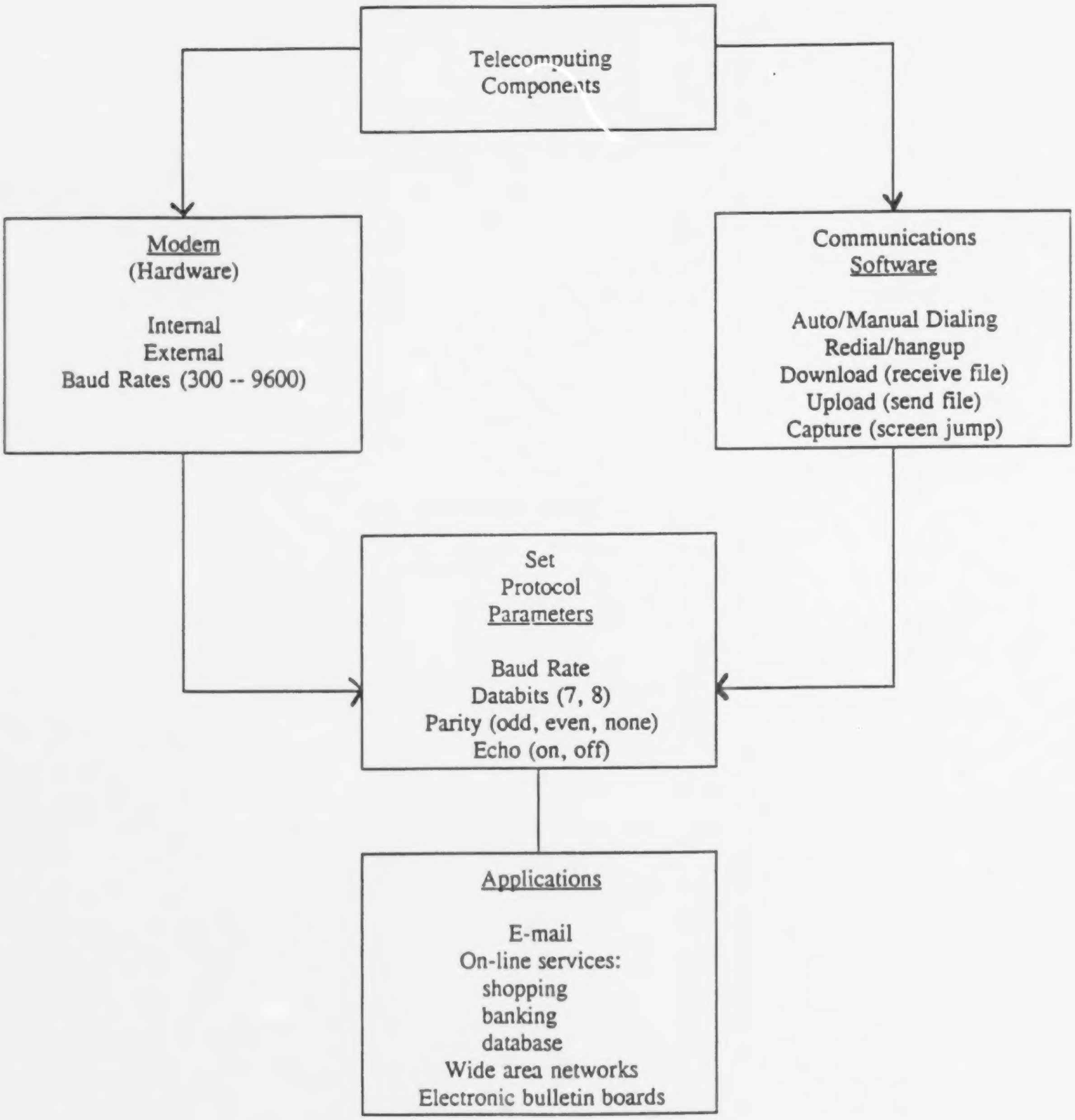
- **modem** -- a hardware device that translates signals from analog to digital and digital to analog. Modems can be internal (fit into a slot in the computer) or external (connected to one of the computer's serial ports).

- **online services** -- these subscription services are basically of two varieties: data based with quantitative and/or research information such as Dialog and the Dow Jones News Retrieval Service; and, more consumer-oriented services which provide access to education-related services (encyclopedia, references, etc.), games, online shopping, banking, and travel reservations such as CompuServe and Prodigy.

- **parity** -- the binary bit appended to a group of binary digits to make the sum of all the digits either always odd (odd parity) or even (even parity).

- **protocol** -- rules for communication between devices.

- **uploading** -- sending a file or program to another computer system.


Telecomputing Components
Modem
(Hardware)
Internal
External
Baud Rates (300 -- 9600)
Communications Software
Auto/Manual Dialing
Redial/hangup
Download (receive file)
Upload (send file)
Capture (screen jump)
Set Protocol Parameters
Baud Rate
Databits (7, 8)
Parity (odd, even, none)
Echo (on, off)
Applications
E-mail
On-line services:
shopping
banking
database
Wide area networks
Electronic bulletin boards

Editor's comment: This figure appears in Delta Pi Epsilon's Instructional Strategies: An Applied Research Series. Reprinted with the permission of the editor.

REACH OUT AND TOUCH SOMEONE ELECTRONICALLY

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Try new ways of communicating electronically using your school district's electronic mail system or a network electronic bulletin board. "Reach out and touch someone electronically" in another classroom in the same building, across town, or across the state, regionally, nationally, in FBLA/PBL, or in your professional organizations by using some of these tips:

- Submit nominations.
- Broadcast a call for manuscripts, articles, or news releases.
- Compile an electronic rolodex of frequently called numbers, of possible guest speakers, tour ideas, etc.
- Send calendars of upcoming events locally, state-wide, and nationally.
- Develop programs of work for local FBLA/PBL chapters and share electronically with other chapters.
- Vote for officers and issues of concern.
- Send minutes and summaries of meetings.
- Develop lists of software exchanges, freeware, and software summaries and evaluations.
- Give/get directions for use of computer material and equipment.
- Share teaching tips and ideas.
- Provide updates of current issues, agendas of upcoming education, business and industry conferences, and meetings.
- Provide calendars of upcoming meetings, their locations, times, and costs.
- Develop electronic surveys and questionnaires to be administered and scored.
- Develop electronic mailing lists of all types.
- Develop databases and provide lists of free and inexpensive teaching materials.
- Create an "electronic garage sale" of items that your department could exchange, sell, or would like to purchase from other school districts.
- Send electronic invitations.
- Develop sources for grants and monies for program improvement and technological updates.
- Create electronic contests of all types for both students and teachers.
- Have electronic committee meetings.

Computer Languages

Category 15

No additional activities.

General Computer Usage

Category 16

SUBDIRECTORIES?? OR COPYING FILES FROM ONE SUBDIRECTORY TO ANOTHER

CONTRIBUTOR:
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Objectives:

- The student will navigate through a subdirectory system on a hard disk by demonstrating the subdirectory system and copying files from one subdirectory to another.

- The student will use the correct syntax for copying files from one subdirectory to another.

Procedures:

- **Procedures prior to class:**

– Reproduce the handout **HARD DISK SUBDIRECTORY.**

– Write the subdirectories' names (one card for each subdirectory) and file names (two cards for each file name) on card stock large enough for the class to see.

- **In-class procedures:**

– Distribute handout **HARD DISK SUBDIRECTORIES** to students and explain the exercise.

– Select students to represent the root directory and each subdirectory in the handout. Have these students stand in the front of the room in same configuration as the handout. Attach the string or yarn from the root directory to each subdirectory as they are linked in the handout.

– Give each "subdirectory student" a card for each file stored in his/her subdirectory. (Reserve the duplicate card for each file until the file is copied to a new subdirectory.)

– Point out that in the FROM and TO paths, a student cannot use a subdirectory that is not connected by the string or yarn. Example: Student cannot path directly from WP to DATABASE since they are not directly connected by the string of yarn. The path must go through the root directory.

- Have the students transfer files being copied from one subdirectory to another using the following steps for each transfer:

    1) Write on the board:

        (a) DOS command being used
        (b) FROM path in the subdirectory system and file name
        (c) TO path in the subdirectory system and file name

    2) Have the students navigate the pathway of the transfer (FROM -- TO) following the yarn.

        Note: You may wish to have the students demonstrate a navigation. Write this example on the board to show the DOS command, FROM path, and TO path:

        COPY

        FROM: C:\WP51\WPFILES\DOC1.LTR

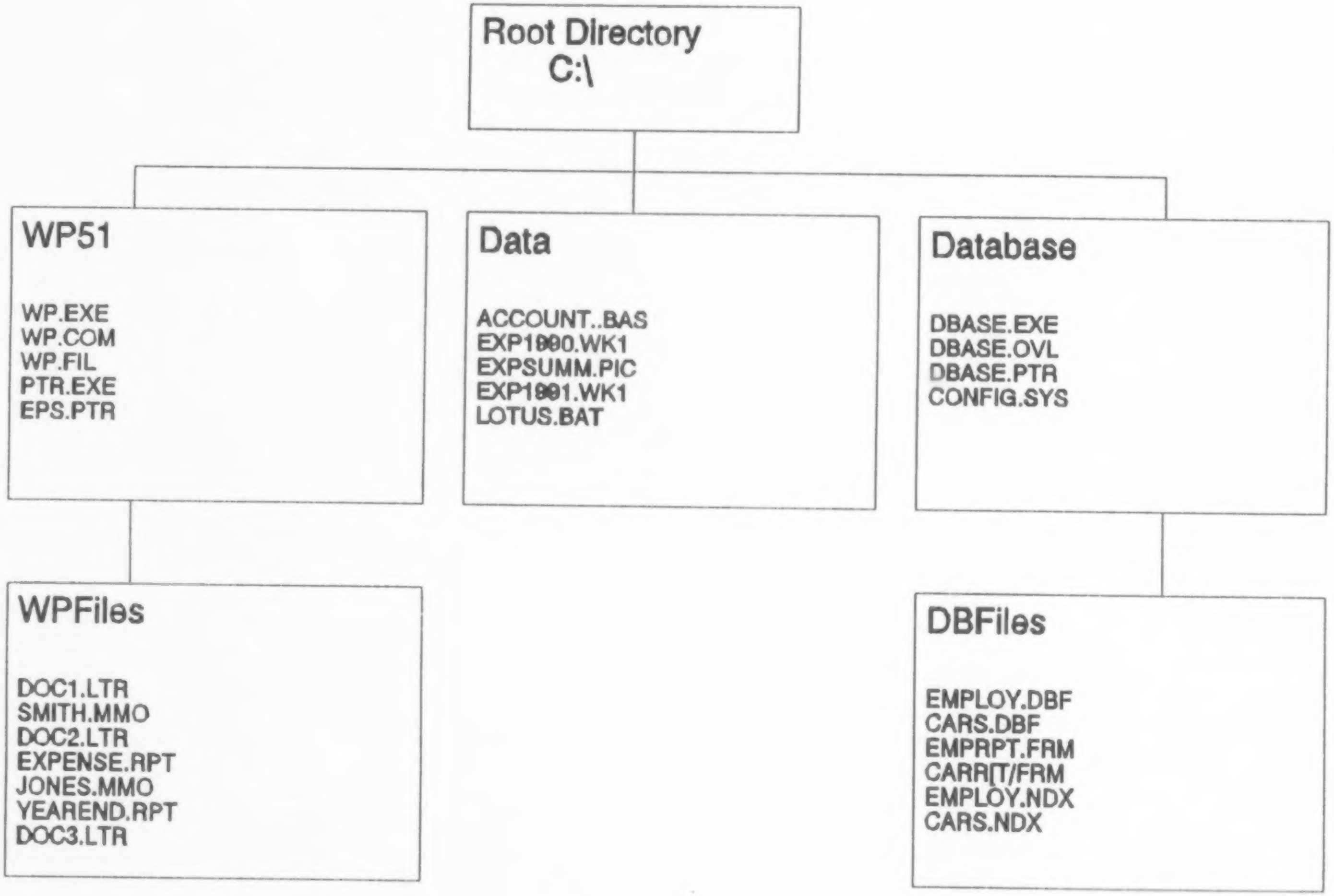
        TO: C:\DATA\DOC1.LTR

        These commands should be written on the board so that they can be evaluated by the class.

- Use the audience to evaluate the commands and to create additional commands.
- Use the following SAMPLE COMMANDS to start the exercise.

    1. Copy SMITH.MMO from the WPFILES subdirectory to the DATA subdirectory.
    2. Copy EMPLOY.DBF from the DBFILES subdirectory to the ROOT directory.
    3. Copy all files with .MMO extension from WPFILES subdirectory to the DATA subdirectory.

HARD DRIVE SUBDIRECTORIES



Root Directory
C:\

WP51

WP.EXE
WP.COM
WP.FIL
PTR.EXE
EPS.PTR

Data

ACCOUNT..BAS
EXP1990.WK1
EXPSUMM.PIC
EXP1991.WK1
LOTUS.BAT

Database

DBASE.EXE
DBASE.OVL
DBASE.PTR
CONFIG.SYS

WPFiles

DOC1.LTR
SMITH.MMO
DOC2.LTR
EXPENSE.RPT
JONES.MMO
YEAREND.RPT
DOC3.LTR

DBFiles

EMPLOY.DBF
CARS.DBF
EMPRPT.FRM
CARR[T/FRM
EMPLOY.NDX
CARS.NDX

Teaching Techniques/ Classroom Management

Category 17

PROJECT ASSIGNMENT CONTRACT

CONTRIBUTOR:
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Objectives:

- The student will be involved directly in the learning process by selecting a project of personal interest (decision making), outlining details of the project (written communication in proposal format), assuming responsibility, meeting deadlines, and sharing her/his efforts with the class (oral communication).

Procedures:

- For each course you teach, assign a long-range project. As you introduce this assignment, discuss ideas for projects with students. In a computer application class, for example, two or three students might form a team to research and prepare a slide/video class presentation on new equipment; an artistic student might create a drawing of an efficient work station; a student might design a database to catalog a personal collection; or a student might be curious about employment requirements or job satisfaction, develop a list of questions (with your assistance), interview those employed in the selected field, and write a report on the findings. Convey to students that the project is **NOT** simply another written assignment--although it can be a written assignment should some of the students elect that as an option.

- Your responsibility is to ensure student success. Give students guidelines for preparing the project description and discuss deadlines. Have students write the date assigned, proposal due date, and due date of the project on the contract form. Review the contracts to identify the complexity of the projects. Encourage more complex projects for students who may not have selected appropriately difficult project(s). Provide guidance to reduce the project scope or provide greater support for students who may have selected extremely difficult project(s).

- Ask student to prepare a brief written and oral summary of their projects (less than one page). Students may stand by their desks to report orally. Even the shy students will be able to handle this part. Schedule class time for projects requiring class presentations. Grade on two factors: meeting deadlines and accomplishing the objectives of the project.

Materials needed:

- Handout: **PROJECT CONTRACT.**

PROJECT CONTRACT

Name ____

Class ______________________________ Period ____________

Date Assigned __________ Project Proposal Due __________ Project Due __________

Project Proposal

Title ____

Description ____

____

____

____

____

____

Student Signature ____________________________________

Instructor Comments __________________________________

____

____

____

Instructor Signature ___________________________________

COMPUTER-GENERATED CALENDAR

CONTRIBUTOR:
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Objectives:

- The student will develop an understanding of working to a time schedule.

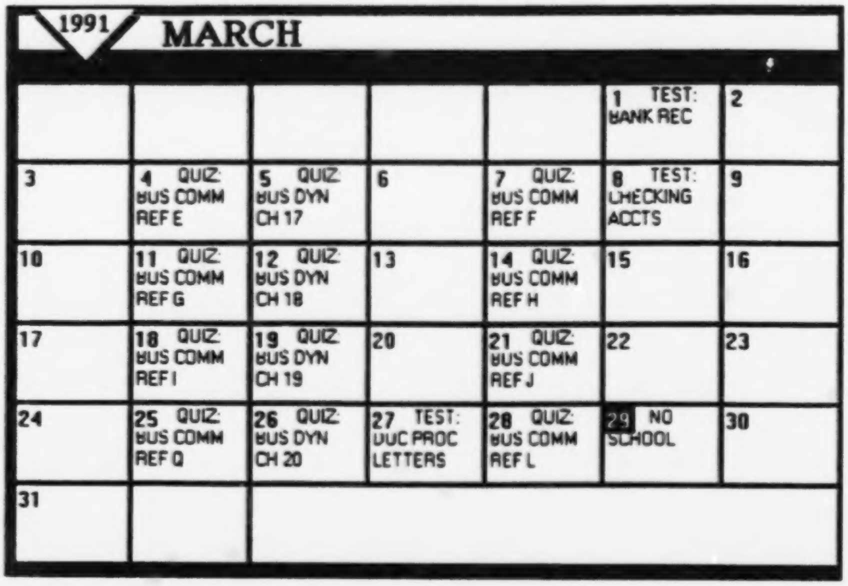
Procedures:

- The teacher may use the schedule as a micro of the planning book while allowing the students to work on an individualized basis.
- Plan one month ahead, assigning more work than the most advanced student is capable of completing as the maximum while setting the minimum to a level reachable for the slowest student. You may want to set a contracted level of work for a determined grade.
- Make enough copies for the entire class as well as posting the calendar in the room.

Materials needed:

- Software capable of generating a calendar.

Example:



1991 MARCH

					1 TEST: BANK REC	2
3	4 QUIZ: BUS COMM REF E	5 QUIZ: BUS DYN CH 17	6	7 QUIZ: BUS COMM REF F	8 TEST: CHECKING ACCTS	9
10	11 QUIZ: BUS COMM REF G	12 QUIZ: BUS DYN CH 18	13	14 QUIZ: BUS COMM REF H	15	16
17	18 QUIZ: BUS COMM REF I	19 QUIZ: BUS DYN CH 19	20	21 QUIZ: BUS COMM REF J	22	23
24	25 QUIZ: BUS COMM REF Q	26 QUIZ: BUS DYN CH 20	27 TEST: DOC PROC LETTERS	28 QUIZ: BUS COMM REF L	29 NO SCHOOL	30
31						

EQUIPMENT CHECK IN/CHECK OUT SYSTEM

CONTRIBUTORS:
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Objectives:

- The student will use a check-out/check-in system for acquiring and returning portable equipment in the classroom.

Procedures:

- Purchase large plastic storage bin(s) (such as locking file box with handle).
- Number small portable equipment: mice, speech adapters, microphones, hand scanners. To avoid having numbers rub off, number equipment in an area that will not be touched during use.
- Assign each student a numbered piece of equipment and record this information in your grade book.
- Have students check out their numbered equipment at the beginning of each period and check it back in at the end of each class.
- The large plastic storage bins are handy devices for organizing portable materials during the day. The bins are very easy to handle and convenient for teachers who change classrooms during the day. The bins can be locked in a cabinet or closet overnight or when not in use.

Materials needed:

- Large plastic bins and permanent black marker for numbering equipment

Comments:

- This procedure is an easy way to keep track of and maintain equipment while teaching students responsibility. Students become accountable for the equipment they use.